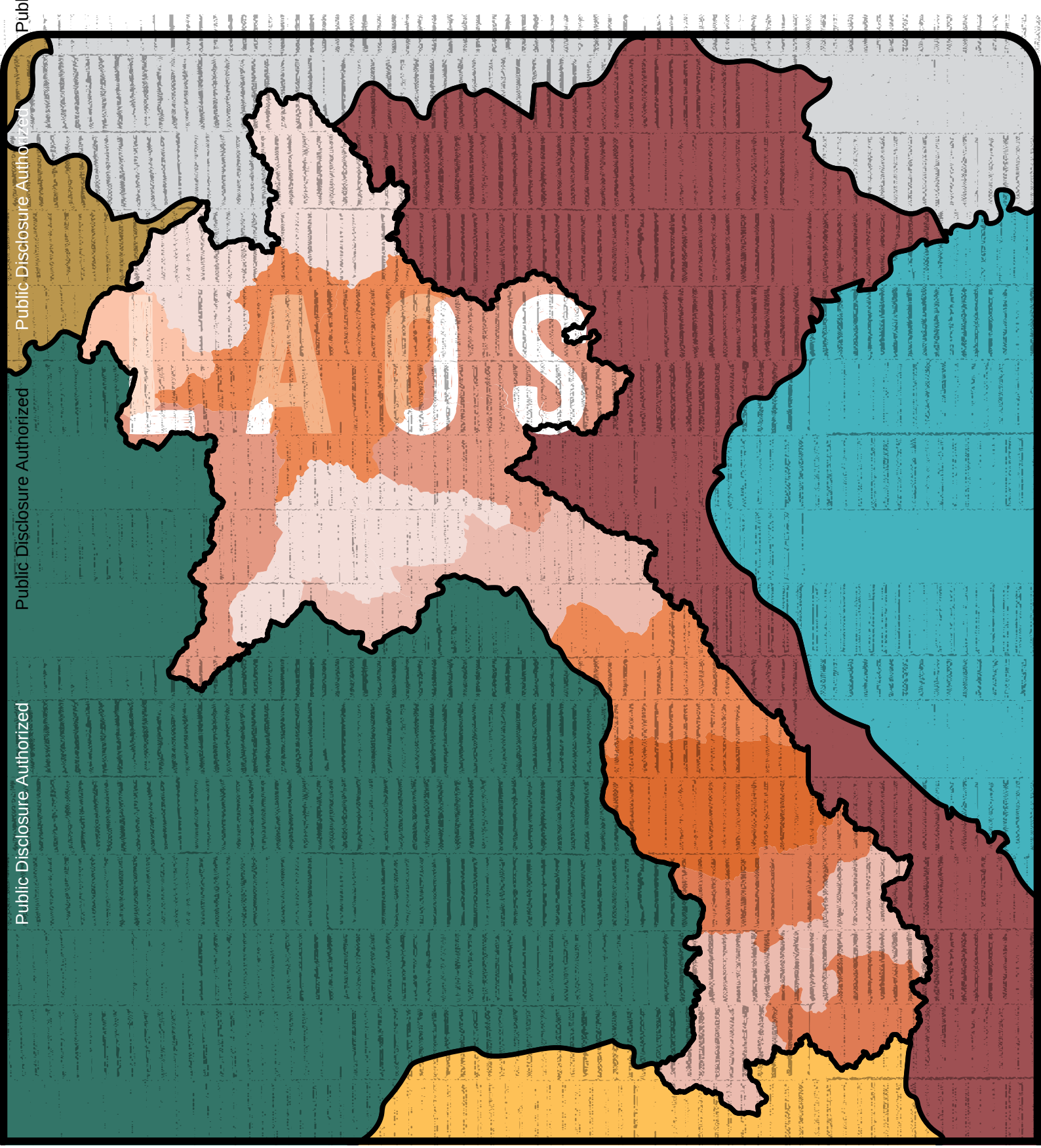
LAO PEOPLE'S DEMOCRATIC REPUBLIC POVERTY ASSESSMENT 2020:
CATCHING UP AND FALLING BEHIND



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ABBREVIATIONS

CBHI	community-based health insurance
FAO	Food and Agriculture Organization
FCS	food consumption score
LECS	Lao Expenditure and Consumption Survey
LSB	Lao Statistics Bureau
MPI	multidimensional poverty index
MSE	micro and small enterprise
NHI	national health insurance
NTC	nutrition conversion table
NSSF	National Social Security Fund
OOP	out-of-pocket
OPHI	Oxford Poverty & Human Development Initiative
PDR	People's Democratic Republic
PPP	purchasing power parity
WDI	World Development Indicators
WFP	World Food Programme

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EXECUTIVE SUMMARY

Poverty in Lao People's Democratic Republic (PDR) has declined, with notable progress in previously lagging regions. Since 2012/13, the incidence of poverty declined by 6.3 percentage points to 18.3 percent in 2018/19. The rural-urban gap and disparities across provinces have narrowed due to a faster decline in poverty in lagging areas and stagnation in more well-off regions. While the northern and southern provinces experienced a rapid decline in poverty, reductions in poverty stagnated in central Lao PDR, historically the wealthiest region. Poverty remains higher among ethnic minorities (Chine-Tibet, Hmong-Iumien, and Mon-Khmer) than the Lao-Tai ethnic group. However, the Chine-Tibet ethnic group has achieved remarkable progress in poverty reduction in the past few years, while poverty reduction has been slow among the Hmong-Iumien.

The geography of poverty is changing. There has been a significant shift in the spatial distribution of the poor population as poverty declined in the northern provinces—historically the lagging region, while it has stagnated in the central region, which has become home to a significantly larger share of the poor (from 34 percent in 2012/13 to 42 percent in 2018/19). Although poverty remains a rural phenomenon, the share of the urban poor is rising due to urbanization and slower poverty reduction in urban areas.

Multidimensional poverty also points to lagging areas catching up as access to education and living standards have improved, though food insecurity is still a concern. Multidimensional poverty captures the nonmonetary dimensions of well-being alongside the monetary measure. The incidence of multidimensional poverty declined between 2012/13 and 2018/19, especially in rural areas and the northern and southern regions, mirroring a fall in consumption poverty. School attendance and housing improved the most among nonmonetary indicators. Ownership of motorcycles, refrigerators, and televisions also improved across the board but almost all multidimensionally poor households still do not own vehicles, computers, or telephones. Affordability of healthcare services has improved thanks to the introduction of national health insurance; yet other barriers to accessing healthcare facilities remain, especially among low-income households and the Chine-Tibet ethnic group.

Food and nutrition insecurity are still pressing problems among low-income households in rural areas that rely mostly on home-produced foods. Ethnic minorities are at high risk of experiencing food insecurity, with the Hmong-Iumien facing additional health risks from poor-quality diets.

Inequality has risen due to widening consumption gaps within regions. The Gini index, a measure of inequality, increased from 36 in 2012/13 to 38.8 in 2018/19. As the urban-rural and between-province gaps have declined, a widening consumption gap within areas drove inequality.

Per capita consumption growth was significantly lower than GDP growth, which, combined with rising inequality, contributed to a slower pace of poverty reduction relative to growth. Between 2012/13 and 2018/19, the average annual growth rate for per capita GDP was 5.6 percent, while per capita consumption based on the Lao Expenditure and Consumption Survey grew by only 3.3 percent per year. The result was a slow pace of poverty reduction compared to the rate of economic growth. Between 2012/13 and 2018/19, a one-percent increase in GDP per capita was associated with a mere 0.67 percent decline in the poverty rate. This is indicative of slower growth in household incomes when economic growth was driven by growth in capital-intensive sectors, resulting in insufficient employment required for inclusive growth.

Rising farm income, because of favorable external factors that triggered a supply response in agriculture, drove poverty reduction. Increasing demand for cassava from Thailand and Vietnam, and for cardamom from China, Republic of Korea, and Vietnam, has encouraged households to devote their land to cultivation of these commercial crops. Coffee and tea also recorded higher returns. Non-rice production has progressively become commercialized. Households have been adjusting their crop types and farming practices in response to changing demands and prices, resulting in a shift toward higher value crops and an increase in farm productivity.

Farm income gains were asymmetric across regions and ethnic groups. The commercialization rate was faster in the northern and southern regions, accompanied by a productive change in land-use patterns and rising farm productivity. The average agricultural productivity for the bottom 40 percent grew by 14 percent in the northern region and 12 percent in the southern region but stagnated in the central region. Chine-Tibet farmers underwent a rapid transition from subsistence to commercial agriculture and shifted to high value crops. The least change in land-use patterns was observed among low-income agricultural households in the central region and Hmong-Iumien households, with both experiencing the slowest pace of poverty reduction.

The economy has failed to deliver broad-based job growth. Over the past six years, labor market conditions have not been favorable enough to support inclusive growth. The industry and services sectors did not create enough jobs to absorb the surplus agricultural workforce. This mismatch arose from the growing industry sector creating few jobs while output in the job-absorbing services sector grew slowly. Between 2012/13 and 2018/19, about 20,000 net nonfarm jobs disappeared, translating into 1.7 percent contraction in nonfarm employment and contributing to rising unemployment. Including the seasonally unemployed, the unemployment rate increased from 4.1 percent to 15.7 percent and was accompanied by a decline in the labor force participation rate. All sectors, except the public and hospitality sectors, experienced a net decline in employment. The retail trade sector shed the most jobs, followed by the manufacturing sector. The expanding energy sector did not create enough jobs. Net nonfarm job creation was observed only in Vientiane capital and urban areas in the northern region, albeit insufficient to preventing rising poverty in the capital.

Limited nonfarm job opportunities weighed negatively on poverty reduction. A decline in nonfarm employment limited households' ability to maintain livelihood diversification strategies. Households have become less diversified in their livelihoods and relied on fewer income sources. The share of exclusively agricultural households rose by 10 percentage points between 2012/13 and 2018/19. Limited nonfarm job opportunities stalled urban poverty reduction in recent years. Urban poverty would have been 4 percentage points lower in 2018/19 if households had similar access to off-farm opportunities as they did in 2012/13.

The slackening off-farm labor market created winners and losers. The market failed to offer young workers opportunities, preventing them from leaving agriculture or otherwise becoming unemployed. Youth unemployment quadrupled to 21.8 percent in 2018/19. It is high, irrespective of education level. The gender opportunity and pay gap also increased. Female labor force participation dropped by 15.8 percentage points to 66 percent in 2018/19. Although the labor market conditions became less favorable on aggregate, the average pay increased by 8 percent annually, in tandem with labor productivity. At the same time, low-paid workers exited off-farm labor markets. Educated workers who kept their jobs received higher earnings, but youth entering the labor market were locked out of the opportunities.

Remittances substituted for nonfarm income in driving poverty reduction. Despite limited opportunities in the local labor market, workers found job opportunities elsewhere, and the money they sent contributed to poverty reduction. Migration has increased during the last decade with a sharp rise from 2015 onward. Overall, the survey suggests that 376,000 Laotians have migrated—200,000 domestically and 176,000 internationally. About two-thirds of migrants left between 2015 and 2018. A lack of job opportunities is one of the main push factors, with the high incidence of migration observed in provinces that experienced a significant decline in nonfarm employment. About two in five domestic migrants moved to Vientiane capital, reflecting a continuing urbanization process. International migration is predominant in the central and southern provinces of Champasack, Saravane, Savannakhet, and Sekong. Remittances are a crucial element of household livelihood strategies in Vientiane capital in central and southern Lao PDR, particularly among the Lao-Tai ethnic group.

The COVID-19 pandemic, thus, could weigh negatively on progress against poverty through two main channels: employment and remittances. Disruptions in economic activities due to the pandemic and mitigation measures have impacted jobs and household income and could stall or reverse progress in reducing poverty. Among the hardest-hit areas of the economy were the travel- and tourism-related sectors, including retail trade, transport, food, and accommodation businesses. Given that the hospitality sector was the primary source of job creation besides the public sector during the past few years, the pandemic will likely add pressures to an already stressed off-farm labor market. The lack of livelihood diversification has increased vulnerability to employment shocks and raised the risk of falling deeper into poverty among low-income households. As migrants return and the labor market conditions of destination countries deteriorate, remittances are expected to decline. Given the sizable share of remittances in total household income, they provide a crucial livelihood source, and the loss of remittances could impoverish poor and vulnerable households or push them further into poverty.

A broad set of interventions targeting different groups of the poor are required to maintain the poverty reduction momentum in Lao PDR. The combination of low education and jobless growth has limited off-farm opportunities for the poor, increasing their reliance on agriculture. Yet, farm productivity among most of the poor is low. Ethnic minorities are further constrained by their low connectivity and access to public services.

To identify priorities for poverty reduction going forward, the poor are classified into three main subgroups, each facing different binding constraints and requiring different policies to address the specific challenges. The first group consists of remote, low-educated, agricultural households who are predominantly ethnic minorities. The second consists of better-connected but low-educated agricultural households, predominantly Lao-Tai. These two groups account for between 41 and 45 percent of the poor each. The third group is smaller, making up only 14 percent of the poor, and consists of households engaged mainly in low-productivity nonfarm activities, still with low levels of education but better than the other two groups.

Constraints associated with these groups of the poor suggest that interventions to reduce poverty in Lao PDR should focus on five areas:

- Closing the infrastructure gap and improving connectivity in remote areas where ethnic minorities are concentrated;
- Boosting agricultural productivity through promoting crop diversification and commercialization;
- Promoting low-skill job generation by easing business regulatory restrictions and introducing an employment promotion program;
- Adopting supply- and demand-side measures to promote education investment and skills development to improve access to opportunities for the next generation; and
- Expanding safety nets to provide an income buffer for households with limited livelihood options.

The COVID-19 pandemic poses an additional challenge to poverty reduction strategies as it could push more people into poverty, reinforcing the importance of effective social safety nets. The impacts in Lao PDR are exacerbated by high informality of employment and dependence on remittances, implying that household income losses from economic disruptions will be severe. The pandemic is expected to disproportionately affect the poor and the vulnerable; the latter are likely to fall back into poverty due to their limited ability to cope with income losses. The new poor tend to be similar to the third group of the poor, which has more urban households and employment in the nonfarm sector (construction, informal services, and manufacturing).

Given the complexity of emerging issues, some areas warrant further attention. A better understanding of labor market dynamics is critical to guide policy in support of inclusive growth and tackling inequality; for example, the impact of labor market regulations on job creation, the drivers behind job losses in the retail trade sector, the spillover effect from foreign investment on the local labor market, and job opportunities for youth. Understanding household income shocks and coping mechanisms has become increasingly important amid the COVID-19 pandemic and more frequent and severe climate shocks. Additionally, more investment is needed to close data gaps in order to have a complete understanding of the linkages between the growth pattern and poverty reduction.

1 INTRODUCTION

Lao People's Democratic Republic (PDR) has made substantial progress in poverty reduction, despite the fact that its resource-based development pattern has historically limited the impact of growth on poverty reduction. Thanks to strong economic growth during the past two decades, poverty was cut in half from 46 to 23 percent between 1993 and 2013. Other welfare indicators show an improvement in living standards. Although poverty declined, mirroring economic growth, the impact of growth on poverty reduction was low. Between 2008 and 2013, average household consumption grew by only 2 percent, falling behind the average GDP growth rate of 8 percent. Development has been significantly shaped by the mining and energy sectors. The growth of the capital-intensive mining and power sectors yields only limited jobs, and a large fraction of the population is still dependent on the low-productivity agricultural sector. As a result, the country lacks productive industries to absorb labor and create high-quality jobs.

The most recent round of the Lao Expenditure and Consumption Survey (LECS), the primary source of official poverty statistics, was implemented between June 2018 and May 2019. The Lao Statistics Bureau (LSB) has conducted the LECS at five-year intervals since 1992/93. The objective of the survey is to assess the living standards of the population and generate necessary data for socioeconomic planning. The LECS survey is the primary source of official poverty statistics in Lao PDR, providing critical information for monitoring progress on poverty reduction, identifying poor and vulnerable groups, and ultimately informing government policies aimed at poverty eradication.

Since the latest poverty profile report in 2014, Lao PDR has maintained its resource-based, high-growth momentum, but several key factors have emerged that could change the dynamics of poverty reduction. The urbanization process has accelerated. The share of the urban population was estimated to grow at an annual rate of 4 percent between 2015 and 2020, higher than the Southeast Asian average of 2.2 percent. This is partly because Lao PDR was among the least urbanized countries to begin with (UNPD 2015). Additionally, foreign investment including the China-Laos railway is expected to improve connectivity and market access, stimulating the development of the agricultural, industrial, and services sectors. However, it could exacerbate regional disparities since much of the activity is concentrated in the north. Better access to markets has also transformed rural areas from rice-based subsistence farming toward commercial, market-oriented systems. Nevertheless, widespread flooding compounded by the dam collapse in Attapeu province in 2018, affected

the livelihoods of the rural poor and vulnerable who were largely dependent on farming, livestock, and other agricultural work. Lastly, fiscal space has deteriorated, limiting the government's ability to increase or maintain an already low level of social spending required to improve public service delivery, social infrastructure, and social protection programs.

This poverty assessment will provide insights into the success (or lack thereof) of poverty reduction in Lao PDR during the past six years. Analyses in this report are primarily based on the LECS, complemented by existing literature. The report will also help identify poor and vulnerable populations as well as emerging issues that have slowed progress toward inclusive development.

NEW POVERTY LINE AND CONSUMPTION AGGREGATE IN 2019

The 2019 poverty assessment is based on a new consumption aggregate and poverty line to better reflect changes in living standards and spending patterns of the Lao PDR population, setting a new benchmark for the country's future development. It is best practice to occasionally revise the poverty estimation methodology to reflect the evolution of minimum basic needs and spending patterns of the poor as living standards improve and society undergoes changes. For Lao PDR, the poverty methodology was first established in 1997/98 and has not been revised since. Robust growth and broad policy reforms during the last decade have transformed the lives of Laotian people and changed spending patterns in households. Nonfood items have become more diverse, with some available at lower prices. Access to services and infrastructure has expanded, broadening viable asset and durable goods options. These changes call for the need to rebase poverty measures to align them to the minimum basic needs and revise the consumption aggregate to reflect the spending patterns of the Lao population in 2019.

The new consumption aggregate includes a larger variety of durable goods and housing rent which are the two major differences with the consumption aggregate used before. Newly introduced durable goods include cellular phones, washing machines, cars, motorcycles, stoves, refrigerators, and air conditioners. The larger variety reflects the growing importance of household appliances and assets. Many have become more accessible due to improved access to services and infrastructure. like durable goods, dwellings have become a major asset of Lao households, and the dwelling's value reflects living conditions and access to services. Housing rents are imputed for households using a hedonic regression that estimates the rental value of dwellings based on the dwellings' characteristics and location.

The new poverty lines are constructed using the 2018/19 LECS, following the cost of basic needs approach. They reflect the food and nonfood consumption patterns of the population in 2019. The food poverty line is derived from a food basket of 2100 calories per day for the reference poor population. A nutrient conversion table (NCT) adopted by the Food and Agriculture Organization (FAO) for Lao PDR is used to convert food quantities consumed into calorie intakes. The new food basket contains 28 food items, and the new nonfood basket consists of 24 items. The newly included items such as fresh milk, coffee, readymade food, utilities, gasoline, medicines, and mobile phone fees reflect changes in the food and nonfood consumption patterns of Lao populations.

The national poverty line is estimated at ₭N 280,910 per month per person at 2019 prices (approximately $1.1 a day or $2.4 a day in 2011 purchasing power parity [PPP] terms). Median consumption per capita is ₭N 469,184 per

TABLE 1.1.
Poverty line and consumption aggregate

	TOTAL	FOOD
Poverty line	280,910	208,885
Median consumption per capita	469,184	297,696
Mean consumption per capita	643,147	352,423

Note: Values are shown monthly in terms of 2019 price.

month—67 percent higher than the poverty line (Table 1.1). The food poverty line is set at ₭N 208,885 per month per person, comprising a large share (75 percent) of the poverty line. The reference poor population spends a high percentage of income on food. For the average Lao household, food constitutes approximately half of total consumption.[1]

This poverty assessment depicts poverty and inequality in Lao PDR and explores the key drivers of poverty reduction. The report is divided into two parts. Section 1 provides updates on poverty and inequality in Lao PDR. Section 2 approaches key drivers of poverty and escape routes from poverty by topic. The structure of the report is as follows:

SECTION 1
POVERTY AND INEQUALITY IN LAO PDR

- Chapter 2 summarizes trends in poverty and inequality by describing i) the changing geography of poverty and patterns of inequality; ii) the contribution of growth and inequality to poverty reduction; and iii) poverty in a regional context.
- Chapter 3 draws a picture of poverty by illustrating the distribution of poverty by geographical location and socioeconomic characteristics as well as presenting a taxonomy of poverty and vulnerability.
- Chapter 4 constructs the multidimensional poverty indicator to i) investigate whether monetary and nonmonetary measures portray the same story, and ii) evaluate the extent of multiple deprivations in Lao PDR.
- Chapter 5 complements Chapter 4 with the health dimension. The chapter describes the incidence of malnutrition, food insecurity, and access to affordable and quality health services.

SECTION 2
DRIVERS OF POVERTY REDUCTION IN LAO PDR

- Chapter 6 analyzes the relationship between growth, economic transformation, and poverty reduction. This chapter i) deconstructs the growth process to explore how it has translated into the evolution of household livelihoods and income, and ii) examines three key components of household income and how they contribute to poverty reduction: nonfarm income, farm income, and (remittance) transfers.
- Chapter 7 examines the evolution of farm income as the main driver of poverty reduction. The chapter focuses on a transition from subsidence to commercial agriculture, the pattern of land utilization, and farm productivity.
- Chapter 8 explores, in detail, another key component of household income—nonfarm income. The chapter focuses on nonfarm employment opportunities, households' participation in the off-farm labor markets, and their nonfarm earnings.
- Chapter 9 concludes by supplementing the local labor market with employment opportunities that lie elsewhere. This chapter explores the importance of remittances—the last key component of household income—and their contribution to poverty reduction.

Chapter 10 concludes the report with a taxonomy analysis to classify the poor into subgroups and formulate policy recommendations to meet the specific needs of each group.

1 Annex 1 presents the 2018/19 poverty measurement methodology in detail. All subsequent analyses in this poverty report use the new consumption aggregate and poverty line.

2 TRENDS IN POVERTY AND INEQUALITY: CATCHING UP AND FALLING BEHIND

SNAPSHOT OF POVERTY IN 2018/19

In 2018/19, 18.3 percent of the Lao People's Democratic Republic (PDR) population lived below the poverty line. The national poverty headcount rate, estimated using the new poverty line and consumption aggregate, was 18.3 percent in 2018/19, implying that almost one-fifth of the Lao PDR population were living on less than ₭N 9,364 a day (approximately $1.1 per person per day or in 2011 purchasing power parity [PPP], $2.4 per person per day).

Poverty incidence was higher in rural areas, where 23.8 percent of the population lived in poverty compared to 7 percent in urban areas (Figure 2.1a). The incidence of poverty was comparable across the three regions (north, central, and south), although there was a substantial gap between the Vientiane capital and the rest of Lao PDR.[2] Among the three regions, the highest poverty incidence was found in the central region where the poverty rate stood at 21.5 percent compared to the lowest poverty rate in the southern region at 17.7 percent.

The measures of poverty depth and severity indicate that the rural poor lived further below the poverty line than the urban poor. Poverty depth, as measured by the poverty gap, is the extent to which individuals fall below the poverty line. It also measures the minimum cost of eliminating poverty. The larger the poverty gap, the poorer on average the people below the poverty line are, and the more resources are needed to lift the poor out of poverty. Poverty severity puts more weight on the poorest, giving an indication of inequality among the population living below the poverty line. In 2018/19, the poverty gap was estimated at 3.9 percent for Lao PDR (Figure 2.1b). It was higher in rural areas (5.1 percent) than in urban areas (1.3 percent).

2 Lao PDR is divided into 17 provinces and one municipality. In this report, the provinces are divided into three regions: north, central, and south. The northern region includes Bokeo, Huaphanh, Luangnamtha, Luangprabang, Oudomxay, Phongsaly, and Xayaboury. The central region includes Borikhamxay, Khammuane, Savannakhet, Vientiane, Xaysomboun, and Xiengkhuang. The southern region includes Attapeau, Champasack, Saravane, and Sekong. The municipality or Vientiane capital is not included in the central region and is analyzed separately due to the distinctive features of poverty there.

Poverty incidence and depth were highest in central Lao PDR. The measures of poverty depth and poverty severity supplement information on poverty disparities across regions. In 2018/19, central Lao PDR had the largest proportion of the population living below the poverty line, and they were poorer than the poor in other regions. While southern Lao PDR experienced a lower incidence of poverty than northern Lao PDR, consumption levels among the poorest in both regions were equally low. Poverty severity was estimated at 1.2 percent in 2018/19 for both regions despite the poverty headcount rate being 3 percentage points higher in northern Lao PDR (Figure 2.1c).

BOX 2.1. REVISION OF POVERTY METHODOLOGY AND TREND COMPARISONS

The poverty methodology in Lao PDR was first established using the 1997/98 Lao Expenditure and Consumption Survey (LECS 2) and has not been revised since. To ensure that poverty measures reflect the minimum basic needs of the current population of Lao PDR, the poverty methodology was revised based on the 2018/19 LECS 6 survey (World Bank and LSB, 2014 and forthcoming 2020). While the revision of the poverty methodology ensures that poverty estimates reflect the evolution of living standards and spending patterns of the Lao PDR population, the change poses a challenge for comparing trends over time. A comparison of poverty estimates between 2012/13 and 2018/19 using the revised poverty methodology requires a backward estimation of poverty in 2012/13. Specifically, one needs to construct the poverty line and the consumption aggregate for the 2012/13 survey round that are comparable to those of 2018/19. First, the 2018/19 poverty line is updated backward with an adjustment for price changes between 2012/13 and 2018/19. Deflators are calculated from a Laspeyres price index based on the new reference basket, separately for the food and nonfood baskets. Secondly, a consumption aggregate is constructed for the LECS 5 survey using the revised definition. Some of the major adjustments are: i) the inclusion of all durable goods using the straight-line depreciation method; ii) the inclusion of imputed rent using a hedonic regression; and iii) the replacement of education expenditure from a consumption diary by a 1-year recall from the education module.

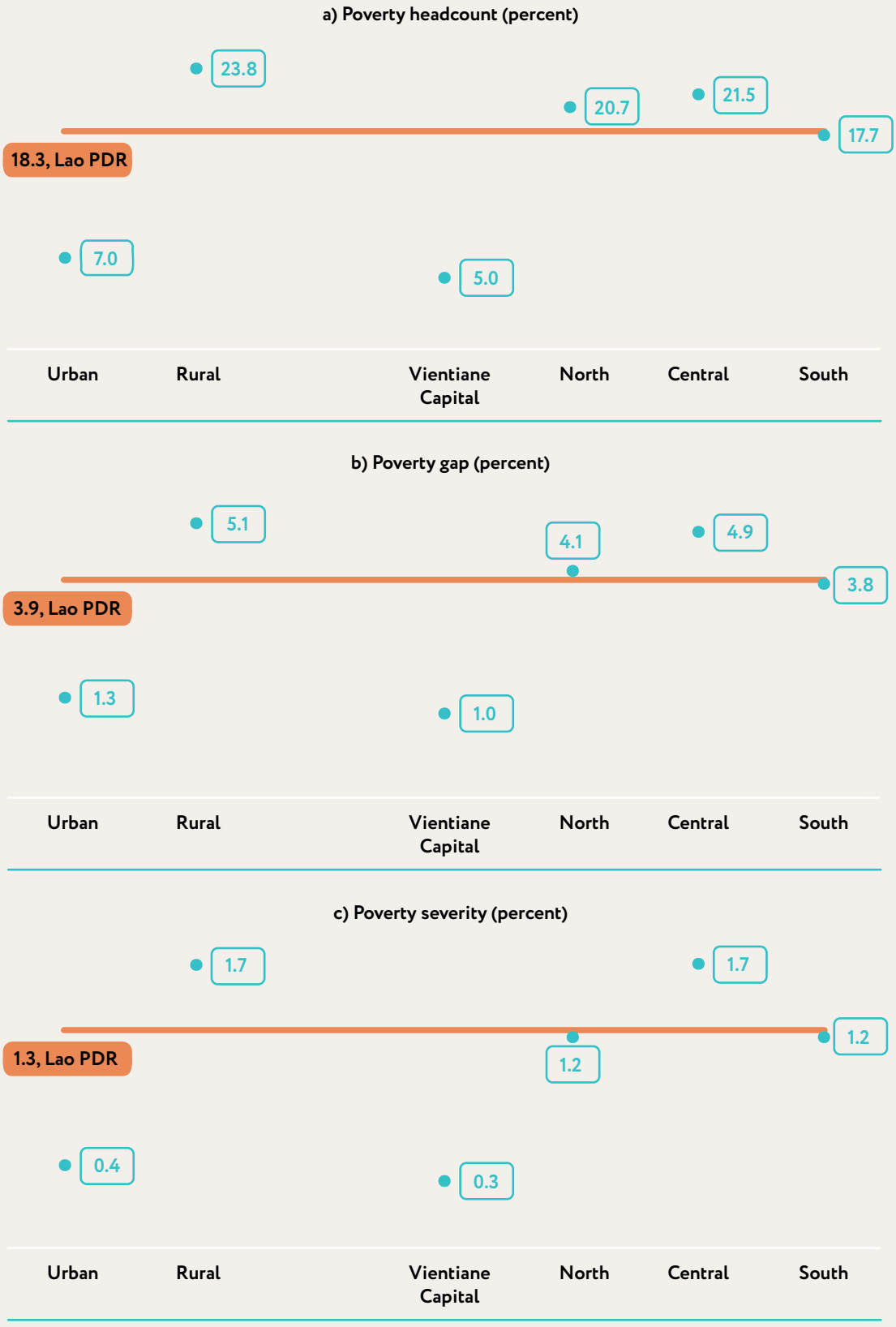
In addition to the revised poverty methodology, a major difference between the LECS 5 and the LECS 6 surveys that must be accounted for is a change in the questionnaire design. Essentially, a period of diary was reduced from 30 to 14 days to improve data quality and minimize fieldwork costs. To overcome this challenge, a randomly selected subsample of the LECS 6 survey was implemented using a 30-day diary. Table 2.1 shows poverty trends using the revised poverty methodology (based on the 2018/19 LECS 6 survey) with a backward estimation of poverty in 2012/13 as described above, and the previous poverty methodology (based on the 1997/98 LECS 2 survey) in which a 30-day diary subsample is used for LECS 6.

Annex 1 presents the 2018/19 poverty measurement methodology in detail and reports the robustness check for poverty trends using survey-to-survey imputation techniques.

TABLE 2.1.
Poverty trend comparisons (headcount, percent)

METHODOLOGY	2007/08	2012/13	2018/19
2018/19 poverty methodology		24.6	18.3
1997/98 poverty methodology	27.6	23.2	18.6

FIGURE 2.1.
Poverty 2018/19 by region and urban-rural area



Source: Authors' calculation based on Lao Expenditure and Consumption Survey, LECS 6.

TRENDS IN POVERTY

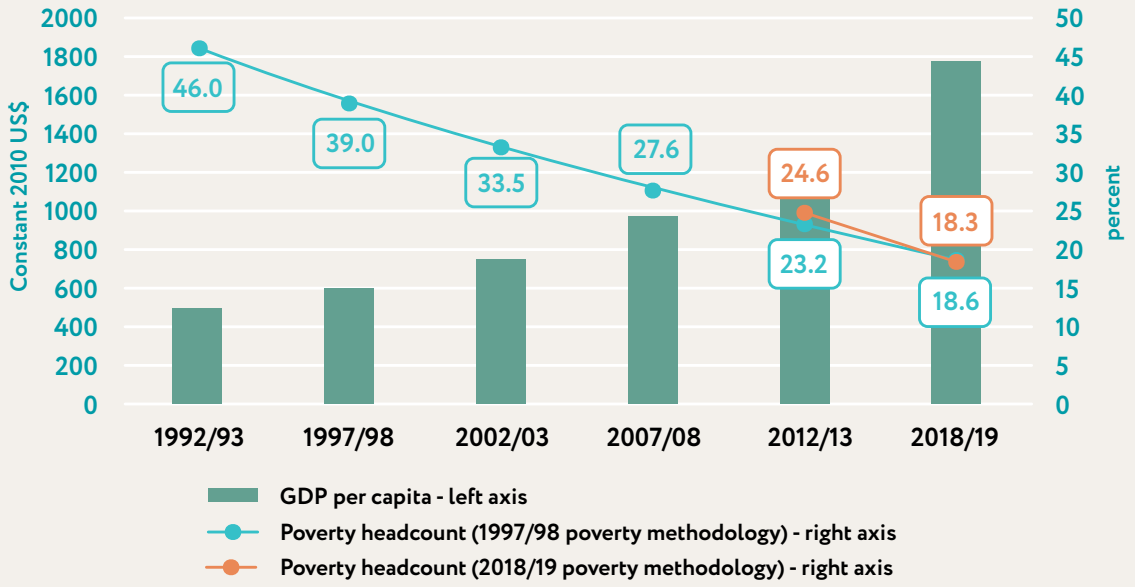
There has been a robust decline in poverty since 2013. Poverty reduced by half from 46 to 23 percent between 1992/93 and 2012/13, and further declined to 18 percent in 2018/19, mirroring sustained economic growth (Figure 2.2). The revised poverty methodology suggests that the incidence of poverty declined by 6.3 percentage points to 18.3 percent in 2018/19. The decline is slightly larger than estimates based on the old poverty methodology, which benchmarks poverty against the living conditions and spending patterns of the population in 1997/98 (See Box 21).Both methodologies show that Lao PDR has maintained the momentum in progress toward sustainable poverty reduction (Figure 2.2). Further discussions of changes in poverty and inequality in this report use estimates based on the new poverty methodology which reflect living conditions and spending patterns adopted in 2018/19.

The pace of poverty reduction was slow compared to the rate of economic growth. Between 2012/13 and 2018/19, when the annual GDP growth rate averaged about 7 percent per year, a one percent increase in GDP per capita was associated with a mere 0.67 percent decline in the poverty rate.[3] Average consumption grew by only 3.3 percent, falling behind the rate of economic growth. This is indicative of slower growth in household incomes overall.

The gap in growth in household consumption and GDP growth in Lao PDR is large when compared to other countries (Figure 2.3). It likely reflects economic growth driven by growth in capital-intensive sectors resulting in insufficient employment required for inclusive growth. This would suggest that growth is not trickling down and translating into proportionate gains in ordinary citizens' livelihoods. This could also reflect some differences in measurement across national accounts and surveys, which has been observed in other countries as explained in Box 2.2.

Generally, the pattern of poverty reduction points to lagging areas catching up. The rate of poverty reduction has been more rapid in rural areas than in urban areas, but a significant gap remains. Between 2012/13 and 2018/19, poverty reduction in urban areas stagnated, with a poverty

FIGURE 2.2.
National poverty trend, poverty headcount 1992/93–2018/19



Source: Government of Lao PDR and WDI, World Bank.

3 The poverty elasticity of growth is slightly lower when using the old poverty methodology. For the same period, it was estimated at 0.52, a small increase from 0.45 in the preceding five years.

rate of about 7 percent in 2018/19, while the rural poverty rate dropped significantly by 7.6 percentage points to 23.8 percent (Figure 2.4). However, there were discrepancies across regions. The reduction in the rural-urban gap was more noticeable in southern Lao PDR, where the gap decreased from 22.7 percentage points in 2012/13 to 9.5 percentage points in 2018/19, thanks to the remarkable poverty reduction in rural areas. In contrast, the urban-rural difference in northern and central Lao PDR marginally declined, each due to different factors. In the central region, the gap slightly fell from 16.1 percentage points to 14.4 percentage points since poverty reduction stagnated in rural and urban areas. In the northern part, urban poverty declined by half between 2012/13 and 2018/19, making it difficult for rural areas to catch up despite having a very high poverty rate initially. As a result, the urban-rural gap declined from 26.2 percentage points to 22.3 percentage points.

BOX 2.2. DISCREPANCY BETWEEN THE SURVEY AND NATIONAL ACCOUNTS ESTIMATES AND ITS IMPLICATION

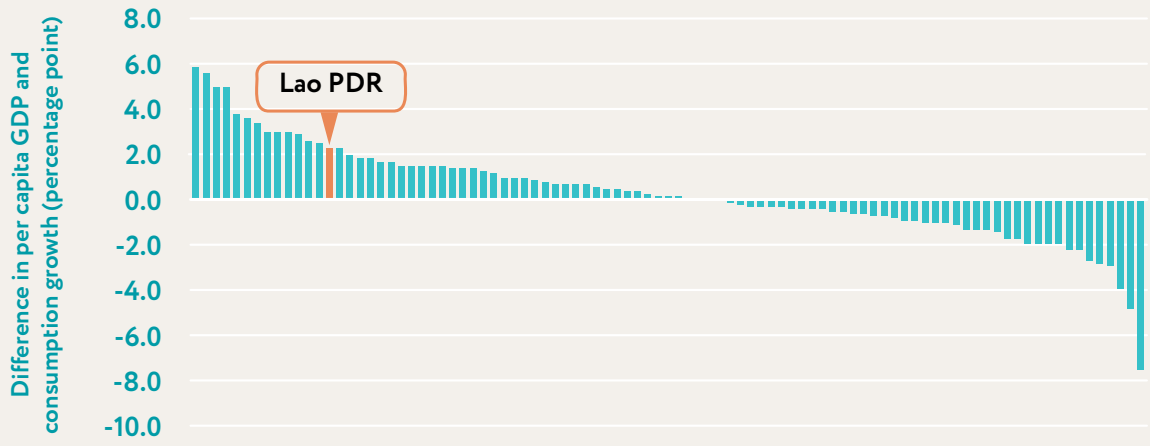
The discrepancy between growth based on surveys and national accounts is large, but not uncommon across countries (Ravallion 2003). There is a large difference between the rate of consumption growth and the rate of economic growth. Between 2012/13 and 2018/19, the average annual growth rate for GDP was 7.2 percent. GDP per capita grew at an annual rate of 5.6 percent, but household consumption per capita based on the Lao Expenditure and Consumption Survey grew by only 3.3 percent per year. The growth rate of survey consumption per capita is thus 2.3 percentage points lower than the growth rate of GDP per capita. Discrepancies like this happen in the international context, although in most countries the difference is less noticeable than in Lao PDR, including in resource-driven economies. There are countries that exhibit a larger gap, such as Ethiopia (5.5) Mongolia (5.0), Bangladesh (3.6), Croatia (3.3), Uganda (3.0), and Rwanda (2.3).

There are several potential reasons for the divergence. One possible reason is that household surveys fail to include extremely wealthy households who have a high nonresponse rate. This could partly be verified by tracking changes in private consumption in national accounts, but such disaggregation is not readily available. If a large gap is, indeed, because of the failure of surveys to capture extremely wealthy households, inequality is therefore underestimated. Accounting differences between the national accounts and the survey-based consumption aggregate is another reason. The consumption aggregate used for measuring poverty amortizes spending on housing construction and the purchase of durable assets, but the full purchase value is recorded in national accounts. This could underestimate survey-based consumption growth if expenditures on durable goods are rapidly increasing. Lastly, GDP itself could have been mis-measured. Having more disaggregated national accounts data will help assess whether it is the growth pattern or the measurement errors that are contributing to a slow rate of poverty reduction.

The discrepancy warrants further attention in Lao PDR to pinpoint the relationship between economic growth and poverty. Whether the pace of poverty reduction relative to economic growth is high or low cannot be easily determined due to large differences between the survey and national accounts estimates. The growth elasticity is low, based on the GDP growth rate, with a 1 percent increase in GDP per capita associated with a mere 0.67 percent decline in the poverty rate. The elasticity of poverty with respect to average household consumption is much higher at –1.2. On the one hand, the former would imply that GDP growth has not translated into proportionate gains in living standards, which is observed in some resource-driven economies. Even so, the elasticity of poverty with respect to non-resource GDP per capita for Lao PDR remains low at -0.73. On the other hand, the survey-based estimates suggest actual growth could be lower than what national accounts imply, but also more inclusive.

FIGURE 2.3.

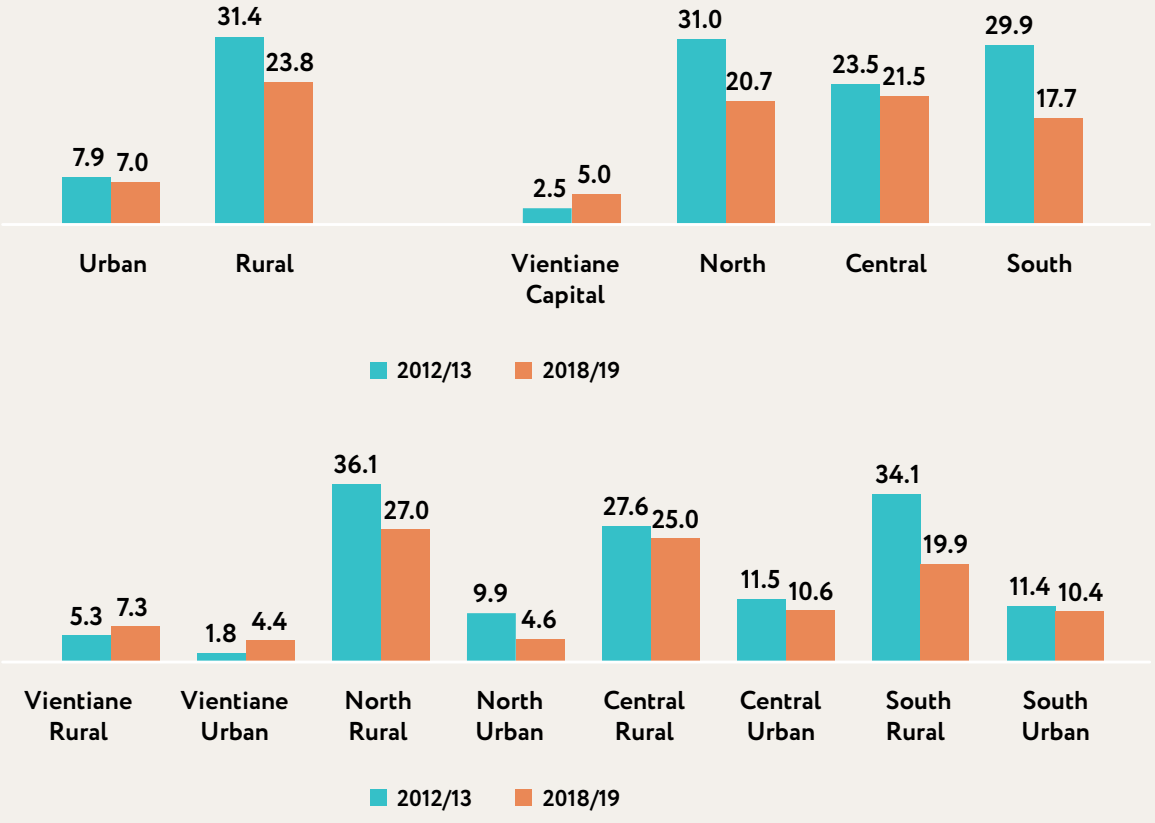
Gap in per capita GDP and per capita household consumption growth (Circa 2010–17)



Source: PovcalNet, World Development Indicators, and Authors' calculation based on LECS 5 and LECS 6.

FIGURE 2.4.

Trends in poverty by region and urban-rural poverty headcount 2012/13–2018/19 (percent)

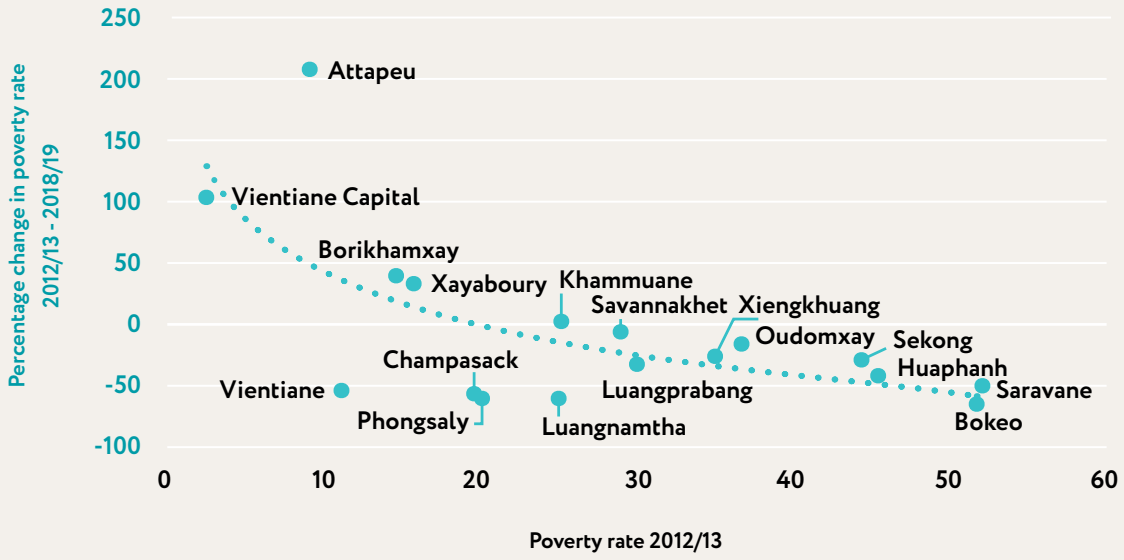


Source: Authors' calculation based on LECS 5 and LECS 6.

Poverty reduction was uneven across provinces but exhibited a catch-up pattern (Figure 2.5). Provinces in northern Lao PDR, once considered to be the most poverty-stricken region, drove the impressive progress in reducing poverty. Between 2012/13 and 2018/19, poverty rates decreased in all northern provinces except Xayaboury, with Bokeo experiencing the largest poverty reduction in absolute terms due to its high incidence of poverty in 2012/13 (Figure 2.6). The poverty headcount rate of the region substantially fell from 31 percent to 20.7 percent. Poverty declined in all southern provinces too, except in Attapeu province, which experienced severe flooding after the Xe Pian-Xe Namnoy hydropower dam collapsed in 2018, and the poverty rate more than doubled. Overall, the south experienced a 12-percentage point decline in poverty from 29.9 percent in 2012/13 to 17.7 percent in 2018/19, becoming the region with the lowest incidence of poverty, mainly driven by poverty reduction in its most populated province, Champasack. Poverty reduction stagnated in central Lao PDR, where the poverty headcount rate fell slightly from 23.5 to 21.5 percent, with only Vientiane province making significant progress in reducing poverty.

The highest incidence of poverty is in Sekong (Figure 2.7). Despite impressive progress in poverty reduction, the poverty rate remains highest in Sekong at 30.6 percent. Other provinces with more than one-fourth of the population living below the poverty line include Oudomxay (29.2 percent), Attapeu (27.8 percent), Savannakhet (27.5 percent), Huaphanh (26.6 percent), Xiengkhuang (26.0 percent), and Khammuane (25.6 percent). The Vientiane capital and Vientiane province have the lowest poverty rate, at about 5 percent.

FIGURE 2.5.
Change in poverty rate and poverty rate by province, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 2.6.
Change in poverty rate by province, 2012/13–2018/19

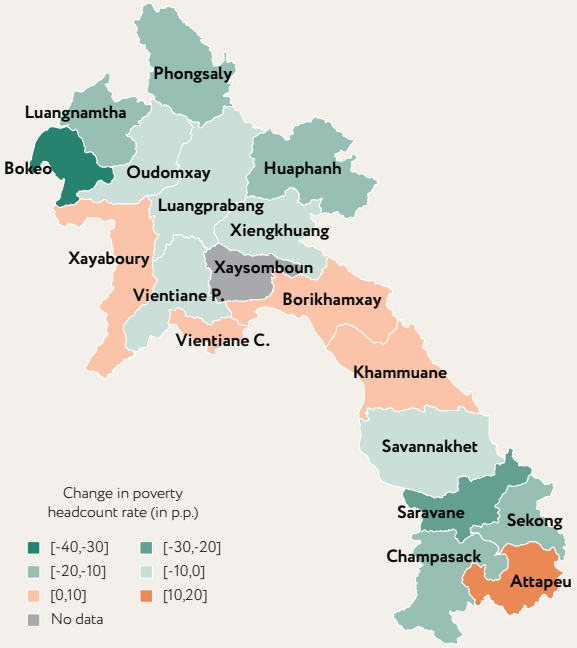
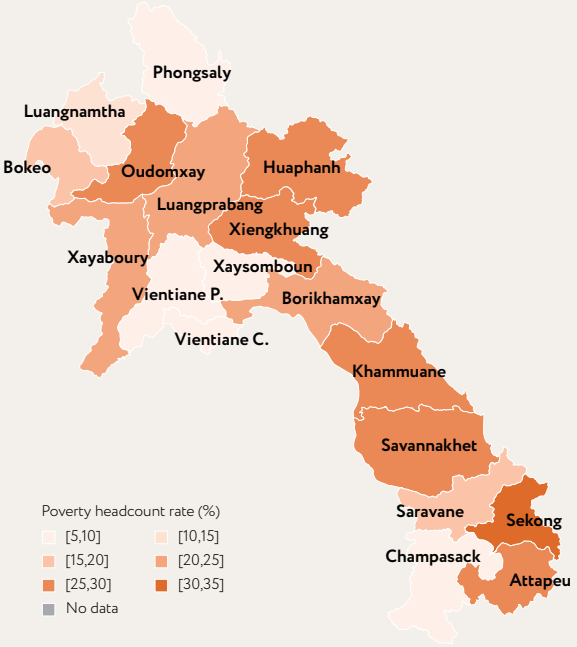


FIGURE 2.7.
Poverty rate by province, 2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.
Note: p.p. = percentage point.

The COVID-19 pandemic is expected to weigh negatively on progress against poverty reduction. Despite a growth slowdown and recurrent floods and droughts in recent years, poverty in Lao PDR continues to decline, advancing gradually toward ending poverty. However, the pandemic could weigh negatively on progress against poverty reduction. A sharper-than-expected growth slowdown in the non-agricultural sectors, as well as a decline in remittance flows, are expected to have a negative impact on poverty, which can only be marginally offset by the recovering agricultural sector. Those linked to sectors experiencing strong demand shocks, such as tourism, retail trade, and hospitality businesses, will also face an increased risk of falling into poverty. A simulation suggests the impact of the COVID-19 pandemic could increase the poverty level compared to a business-as-usual scenario. Based on the growth projections as of May 2020, poverty is estimated to increase by 1.4 to 3.1 percentage points in 2020, compared to a 0.6 percentage-point decline that would have been the case in the absence of the pandemic (Figure 2.8, Table 2.2). The impact of the pandemic on poverty is expected to linger as the economic recovery will most likely be slow, with poverty projected to return to its pre-crisis level in 2021 or later than 2022 under the down-case scenario.

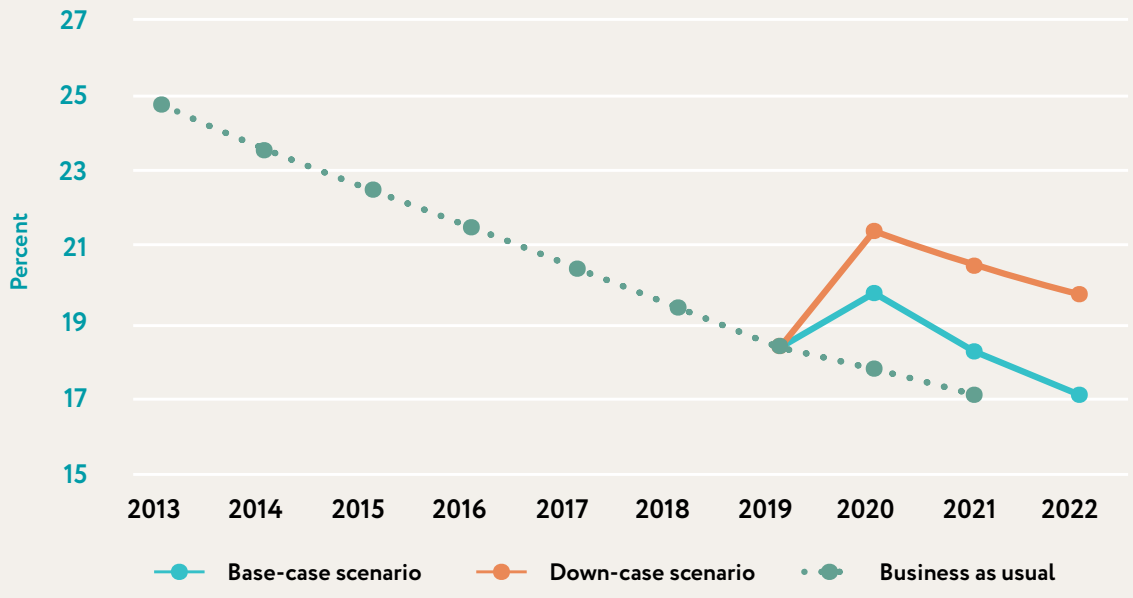
TABLE 2.2.

Impact of the COVID-19 pandemic, projected GDP growth (as of May 2020)

		AGRICULTURE	INDUSTRY	SERVICES	GDP
2020	Base-case	3.2	2.9	–1.4	1
	Down-case	2.4	0.6	–5.3	–1.8
	Business as usual	2.8	8.5	6.5	6.7
2021	Base-case	2.9	6.6	3.3	4.6
	Down-case	2.6	3.8	1.3	2.5
	Business as usual	3.2	8	6.5	6.6
2022	Base-case	2.9	4.5	4.8	4.4
	Down-case	2.6	2.4	2.3	2.4

FIGURE 2.8.

Impact of the COVID-19 pandemic, projected poverty rates (as of May 2020)



Source: Authors' calculation based on LECS 6 and a macro-micro simulation model.

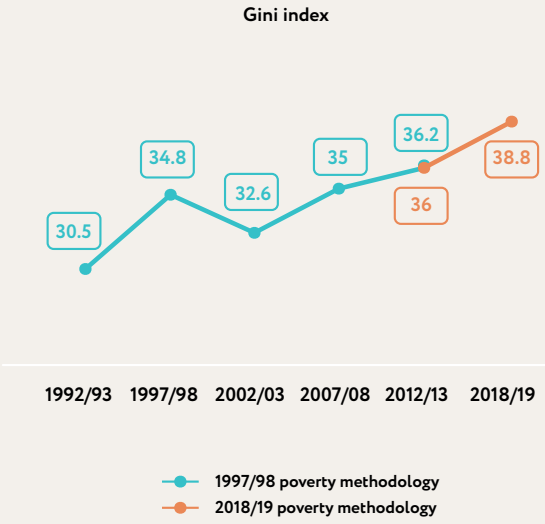
Note: Macro-micro simulation results. Growth projections as of May 2020 (World Bank, 2020). The business-as-usual scenario is based on growth projections prior to the crisis. The simulation projects changes in industry and services employment based on historical employment-growth elasticity by sector and assumes a halt in the transition out of agricultural employment. The down-case scenario assumes 25 percent of job losses in travel- and tourism-related sectors. Remittances fall by 30 percent in both scenarios before slowly returning to the precrisis level, reflecting the Thai economic outlook.

TRENDS IN INEQUALITY

Consumption growth was more favorable to the nonpoor. The average consumption per capita of the poorest quintile grew by 2 percent per year compared to the national average of 3.3 percent, while for the richest quintile, the average consumption grew 4 percent per year (Figure 2.10). Thus, welfare gains were substantially lower for the poor. This would also contribute to a lower growth elasticity of poverty than if consumption growth were much higher among the less well-off.

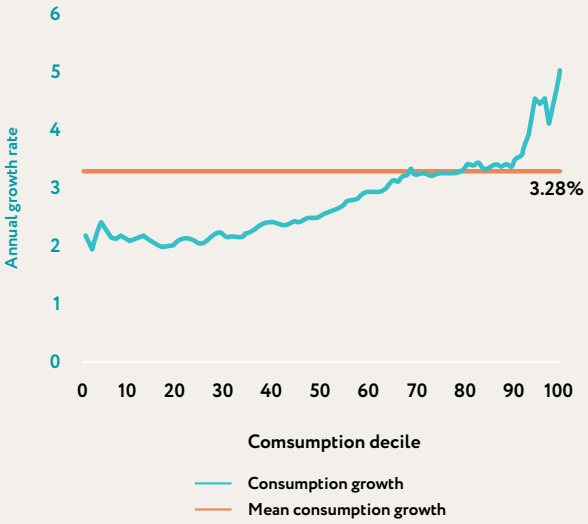
Inequality continues to rise, driven by an increasing concentration of consumption at the top end of the distribution. The Gini index, a measure of inequality, increased from 36 in 2012/13 to 38.8 in 2018/19 (Figure 2.9). Consumption quantile ratios measure the gap between the rich and the poor. They show that the gap between the very rich and the very poor (the 90/10 quantile ratio) increased more than the gap between the middle class and the poor (the 50/10 quantile ratio). In 2018/19, the

FIGURE 2.9.
Trend in Gini index



Source: Government of Lao PDR.

FIGURE 2.10.
Growth incidence curve, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

TABLE 2.3.
Trend in other measures of inequality

	2012/13	2018/19
Gini	36.0	38.8
Theil–L	21.1	24.7
Theil–T	24.2	29.5
Share of the bottom 40	0.2	0.2
90/10 quantile ratio	4.7	5.0
75/25 quantile ratio	2.2	2.3
50/10 quantile ratio	2.0	2.0
90/50 quantile ratio	2.4	2.5

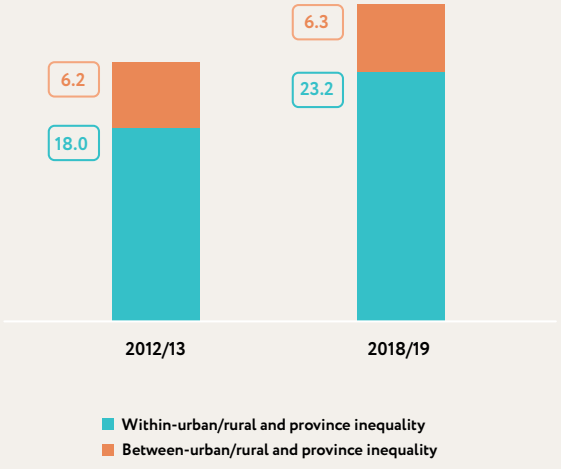
Source: Authors' calculation based on LECS 5 and LECS 6.

average consumption per capita of the richest quintile was almost 7 times larger than that of the poorest quintile, and the ratio rose to 9 for the richest 10 percent. The Theil's T index, which is more sensitive to changes to the top of the consumption distribution, rose more than the Theil's L index, which is more sensitive to changes to the bottom of the consumption distribution. These measures of inequality illustrate that rising inequality was driven by an increasing concentration of consumption at the top end of the distribution. The consumption share of the bottom 40 stagnated (Table 2.3).

As the urban-rural and between-province gaps have declined, it is a widening consumption gap within areas that drove inequality. The Theil index allows a decomposition of inequality into the part that is due to differences within areas and the part that is due to differences between areas. The Theil index rose from 24.2 in 2012/13 to 29.5 in 2018/19. In 2012/13, one-fourth of inequality in the country was due to differences between urban and rural areas and between provinces. The importance of between-area differences declined in 2018/19—to a fifth of overall inequality—while disparities within areas increased, driving the rise in overall inequality (Figure 2.11).

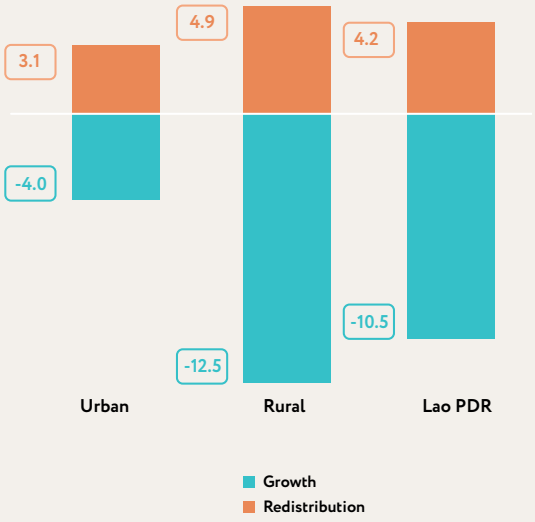
Poverty would have declined further by 4.2 percentage points if inequality had not risen. The Datt-Ravallion decomposition measures how much of the poverty change can be attributed to changes in consumption growth or in the distribution of the gains from growth (Figure 2.12). Between 2012/13 and 2018/19, the potential benefits of economic growth to the poor were undermined by an increase in inequality that accompanied economic growth. The decomposition shows that poverty would have declined by 10.5 percentage points between 2012/13 and 2018/19 if inequality had not risen. Rising inequality almost offset the poverty reduction impact of economic growth in urban areas.

FIGURE 2.11.
Decomposition of inequality, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.
Note: Absolute decomposition of Thiel index.

FIGURE 2.12.
Growth-inequality decomposition, 2012/13–2018/19



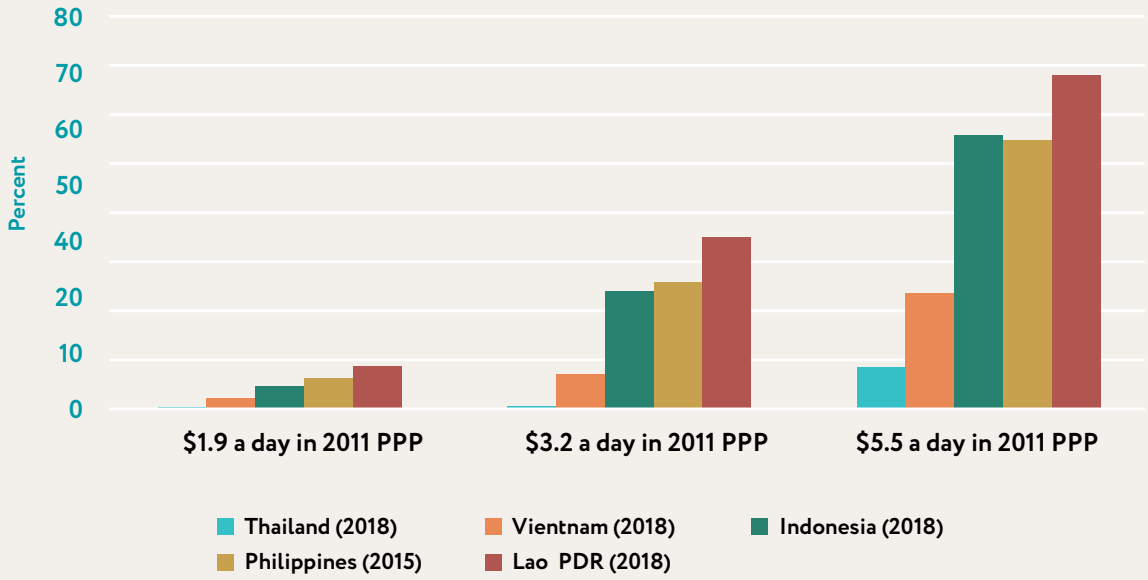
Source: Authors' calculation based on LECS 5 and LECS 6.
Note: Decomposition as proposed by Datt and Ravallion (1992).

REGIONAL COMPARISON

Consumption levels in Lao PDR are low relative to other countries in the region, excluding Cambodia and Myanmar. Approximately 9 percent of the population in Lao PDR live on less than $1.9 a day in 2011 PPP terms, compared to 6 percent in the Philippines and 5 percent in Indonesia (Figure 2.13).[4] Slightly more than one-third of the population have a consumption per capita of less than $3.2 a day in 2011 PPP terms, which is the lower-middle-income international poverty line, compared to one-fourth of the population in the Philippines and Indonesia. Lao PDR achieved a slower pace of poverty reduction from its economic growth than other countries in the region (Figure 2.14). If the impact of economic growth on poverty reduction in Lao PDR had been similar to Indonesia, the country would have almost eliminated extreme poverty ($1.9 a day in 2011 PPP terms) with only 15 percent of the population living below the lower-middle-income international poverty line.

Like other countries in the region, consumption is concentrated at the top end of the distribution. The average consumption among the richest 10 percent in Lao PDR is $17.8 a day in 2011 PPP terms, which is 10 times higher than the average consumption among the poorest 10 percent (Figure 2.16). The difference is comparable to Indonesia, Thailand, and Vietnam. However, inequality, which has been experiencing a decline in other countries, is rising in Lao PDR (Figure 2.15). Unless policy measures to tackle inequality are put in place, inequality is expected to become a pressing issue in Lao PDR.

FIGURE 2.13.
International poverty and inequality

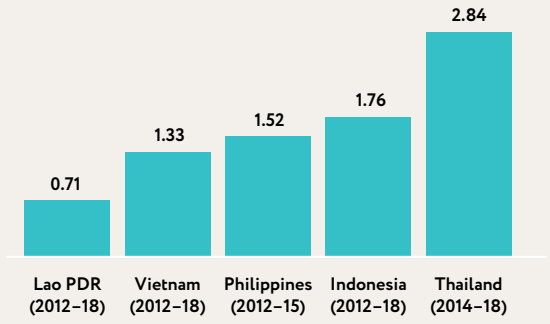


Source: World Bank East Asia and Pacific Team for Statistical Development.

Note: All countries use welfare consumption. The Philippines use income. PPP = purchasing power parity.

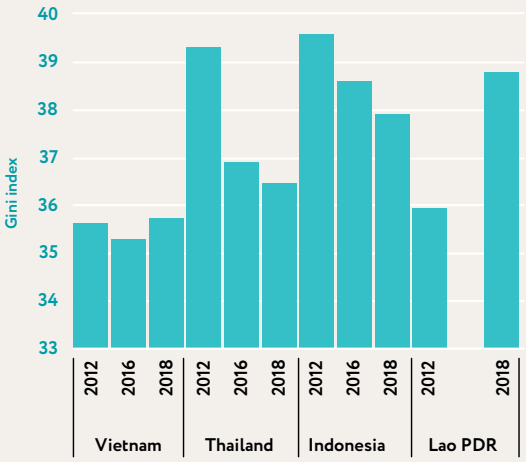
4 International poverty estimates in this report are based on the original 2011 PPPs. Application of the revised 2011 PPPs, which were published in May 2020, may slightly affect these estimates.

FIGURE 2.14.
Growth elasticity of poverty based on the lower-middle-income poverty line



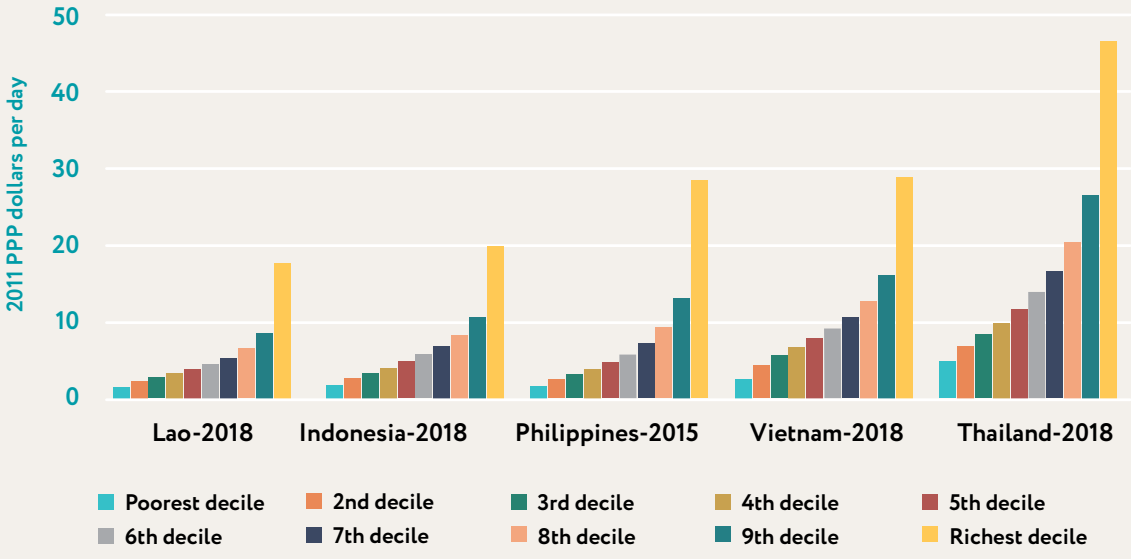
Source: World Bank East Asia and Pacific Team for Statistical Development.
Note: Poverty rates are based on $3.2 a day in 2011 PPP.

FIGURE 2.15.
Regional comparison of Gini index.



Source: World Bank East Asia and Pacific Team for Statistical Development.
Note: All countries use welfare consumption. The Philippines use income.

FIGURE 2.16.
Regional comparison of mean consumption by decile



Source: World Bank East Asia and Pacific Team for Statistical Development.
Note: All countries use welfare consumption. The Philippines use income. PPP = purchasing power parity.

SUMMARY

Poverty reduction during the past six years has been accompanied by the changing complexity of inequality issues. Poverty continues to decline but is uneven across regions. Poverty reduction has exhibited a catch-up pattern across regions and provinces. The northern provinces are experiencing a rapid reduction in poverty. However, poverty reduction has stagnated in central Lao PDR, historically the wealthiest region. The region is now facing a higher incidence of poverty than in the northern and southern regions. The issue needs to be attended to for the country to maintain its momentum in progress toward sustainable poverty reduction. The rural-urban gap and disparities across provinces have narrowed, although some gaps still need to be addressed.

Despite a slight improvement, the pace of poverty reduction is slow compared to the rate of economic growth. Consumption growth has failed to keep pace with economic growth, and the potential benefits of economic growth to the poor have been undermined by an increase in inequality. Growing inequality has been driven by a widening consumption gap within areas, implying that, going forward, the poverty reduction strategy cannot rely solely on geographic targeting and more individual-based targeting needs to be implemented.

3 POVERTY PROFILES

WHO ARE THE POOR?

Poverty is concentrated among the poorly educated. People living in households headed by a person with no formal education have the highest poverty headcount rate at 34.6 percent, more than 10 times higher than the poverty rate among people in households headed by those who have at least completed secondary education. When a household head has primary education, the poverty rate declines to 14.4 percent, and further drops to 6.5 percent when a household head has lower secondary education (Figure 3.1). There is almost no poverty incidence among people headed by a tertiary-educated person. People living in households headed by a person with less than complete primary education constitute 65 percent of the poor, despite making up only 40 percent of the population (Figure 3.2d).

Progress in poverty reduction has been generally more rapid among households headed by a person with at least lower secondary education. Between 2012/13 and 2018/19, poverty declined by more than half among people whose household head had secondary or tertiary education (Figure 3.1), except for vocational training. While the pace of poverty reduction was slower for household heads with primary education or less, the slowest pace was found among people headed by a person with vocational training. Poverty reduction stagnated among this group. In 2012/13, the incidence of poverty was similar to those whose head had a university degree (4.7 percent). In 2018/19, the poverty rate of people headed by a person with complete vocational training had barely changed, becoming higher than the poverty rate among those headed by a person with upper secondary education whose incidence of poverty halved to 3 percent. Nevertheless, these three groups—people headed by a person with upper secondary education, vocational training and university education—together constitute only one percent of the poor (Figure 3.2c).

FIGURE 3.1

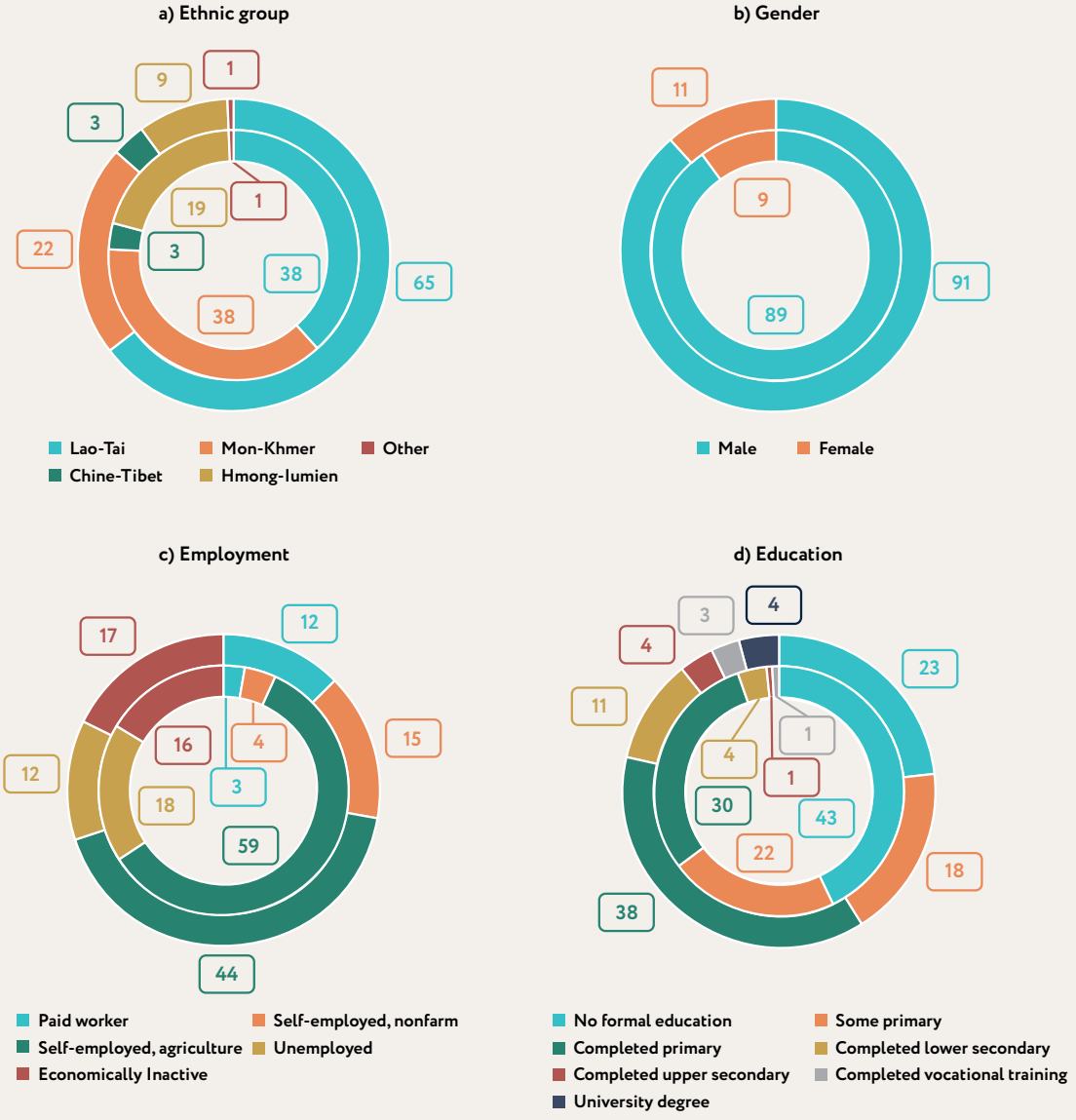
Poverty headcount rate by household head's characteristics, 2012/13–2018/19

Source: Authors' calculation based on LECS 5 and LECS 6.

Poverty remains higher among minority ethnic groups, and the Hmong-Iumien ethnic group, has been lagging. The Lao-Tai ethnic group makes up 65 percent of the population. The three largest ethnic minority groups include the Mon-Khmer, the Hmong-Iumien, and the Chine-Tibet, which constitute 22 percent, 9 percent, and 3 percent of the population, respectively. Between 2012/13 and 2018/19, the poverty rate of the Lao-Tai, Mon-Khmer, and Chine-Tibet declined by almost one-third. Poverty only decreased by 15 percent among the Hmong-Iumien. As a result, poverty remains lowest among the Lao-Tai ethnic group at 10.6 percent, followed by the Chine-Tibet (18.1 percent) and the Mon-Khmer (32.7 percent). The incidence of poverty has become the highest among the Hmong-Iumien ethnic group, at 38.4 percent. They constitute 19 percent of the poor, despite making up less than 10 percent of the population. The Lao-Tai and the Mon-Khmer ethnic groups each constitute 38 percent of the poor population (Figure 3.2a).

FIGURE 3.2

Distribution of the poor (inner ring) and the population (outer ring) by household head's characteristics, 2018/19



Source: Authors' calculation based on LECS 6.

Note: The inner ring shows the distribution of the poor. The outer ring shows the distribution of the population. Labels show the percentage of each group among the poor.

The difference in poverty rates between the Lao-Tai and the Chine-Tibet can be explained by the education gap. Ethnic minorities have lower educational attainment than the Lao-Tai. One-third of the Lao-Tai population has less than primary education, compared to more than half of the ethnic minority population. Only one-third of the Chine-Tibet have completed primary education. Further analysis shows that the difference in poverty rates between the Lao-Tai and the Chine-Tibet can be explained by the education gap. The Lao-Tai and the Chine-Tibet with the same level of education are equally likely to be poor. The poverty rates of the other two ethnic minority groups, however, are always higher than that of the Lao-Tai, even when education is factored in.

The poverty gap between female-headed and male-headed households has declined. Poverty is generally lower among female-headed households than male-headed households. In 2012/13, the poverty rate among the former was 16.3 percent, compared to 25.2 percent among the latter. This gap has become narrower; after a 6.5 percentage-point decline among male-headed households between 2012/13 and 2018/19, compared to a mere 0.9-percentage point decline in poverty among their counterparts. The poverty rate is higher among male-headed households as they tend to be large farming households, while female-headed households are more likely to be smaller in size and engage in the services sector. The average household size of male-headed households is 5.6 persons per household, compared to 4.9 persons per household among female-headed households. Moreover, more than 60 percent of male heads engage in farming activities compared to 45 percent of their counterparts. The faster pace of poverty reduction among male-headed households is thus related to changes in the average household size and the primary economic activity of household heads.

Agricultural households are the poorest. The poverty rate of households headed by a paid wage worker and a nonfarm own-account worker was about 5 percent in 2018/19, a decent decline from 9 percent in 2012/13. The poverty rate among people living in households headed by economically inactive persons, who are mostly the elderly, was 17 percent. Both their poverty rate, and pace of change matched the respective national averages. Poverty remains very high among households headed by a person primarily engaged in family agriculture. A 7.3 percentage-point decline still left the poverty rate remaining stubbornly high among agricultural households, at 24.6 percent in 2018/19. Only households whose heads were unemployed have a higher poverty rate, 28.7 percent. The share of the population headed by an unemployed person has also substantially increased from 1.2 percent to 12.4 percent.[5] About 90 percent of unemployed household heads were previously in agricultural activities and seasonally unemployed. Households whose heads were primarily employed in agriculture and households whose heads were unemployed but had engaged in agricultural activities during the prior 12 months, together constituted 75 percent of the poor.

Remittance-receiving households have a much lower poverty rate than those without remittances, and their share of the population increased. Migration and remittances have become an important source of livelihood. In 2018/19, 14 percent of the population lived in households that received remittances, increasing from 11 percent in 2012/13. The poverty rate among households receiving remittances declined from 13.8 percent in 2012/13 to 10.2 percent in 2018/19, which was almost half the rate of their nonrecipient counterparts.

5 The unemployed comprise all persons of working age who were without work but available for work and seeking work during the previous week. Those who did not seek work but had a job offer to start work within a subsequent short period or were waiting for the next busy season were also counted as unemployed. See Chapter 6 for a discussion of the labor market.

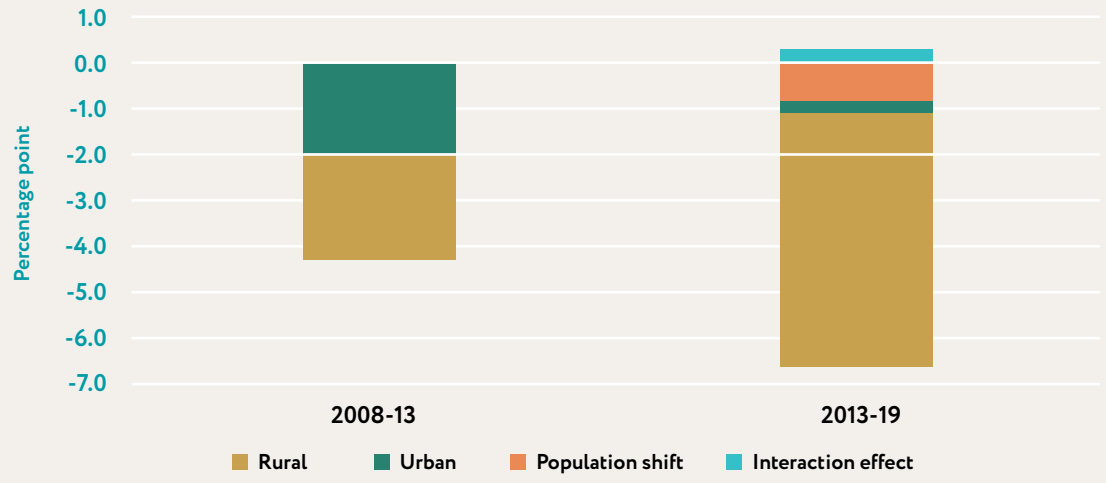
GEOGRAPHY OF POVERTY

Poverty is a rural phenomenon, with nearly 90 percent of the poor population living in rural areas, but the share of urban poor is rising. Rural poverty is more than three times the rate in urban areas. As a result, despite making up 67 percent of the population, rural areas account for 88 percent of the poor population. Nevertheless, the urban share of the poor has increased because of rural-urban migration and a slower decline in urban than rural poverty during the past few years. Between 2012/13 and 2018/19, poverty declined faster in rural areas. At the same time, more people moved from rural to urban areas, and could have contributed to a slower poverty reduction in urban areas. Among those living in poverty, the proportion found in urban areas rose from 9 percent to 12 percent between 2012/13 and 2018/19; over the same period, the urban share of the population as a whole also rose from 29 percent to 33 percent.

The role of migration in poverty reduction has become more noticeable in recent years. A decomposition analysis shown in Figure 3.3 breaks down changes in poverty over time into poverty reduction within rural and urban areas, and as a component of population shifts. Between 2007/08 and 2012/13, poverty reduction was driven to a similar extent by declining poverty within rural and urban areas. The pattern changed in recent years. Poverty reduction was instead driven by reducing rural poverty and increasing population in urban areas where the incidence of poverty is generally lower. In addition, the reallocation of labor out of agriculture that had been pulling households out of poverty no longer occurred within rural areas but rather through rural-urban migration. The share of the urban population increased from 31 percent in 2012/13 to 35 percent in 2018/19 (UNDESA 2019). In fact, rural-urban migrations and the fact that the poor have urbanized faster than the rest of the population could have contributed to a slow pace of poverty reduction in urban areas.

The stagnation of poverty reduction in the central region has led to a significant shift in the spatial distribution of the poor population. Despite maintaining its share of the total population at 36 percent, the central region in 2018/19 made up 42 percent of the poor, a considerable increase from 34 percent in 2012/13. Moreover, unlike the pattern observed at the national level, the rural sector's share of the poor increased in central Lao PDR. Rural areas of central Lao PDR became home to more than one-third of the poor. In contrast, the proportion of the poor found in urban areas rose in the southern region and Vientiane capital but for different reasons. The former was due to a

FIGURE 3.3.
Geographical decomposition of consumption poverty change, 2007/08–2018/19



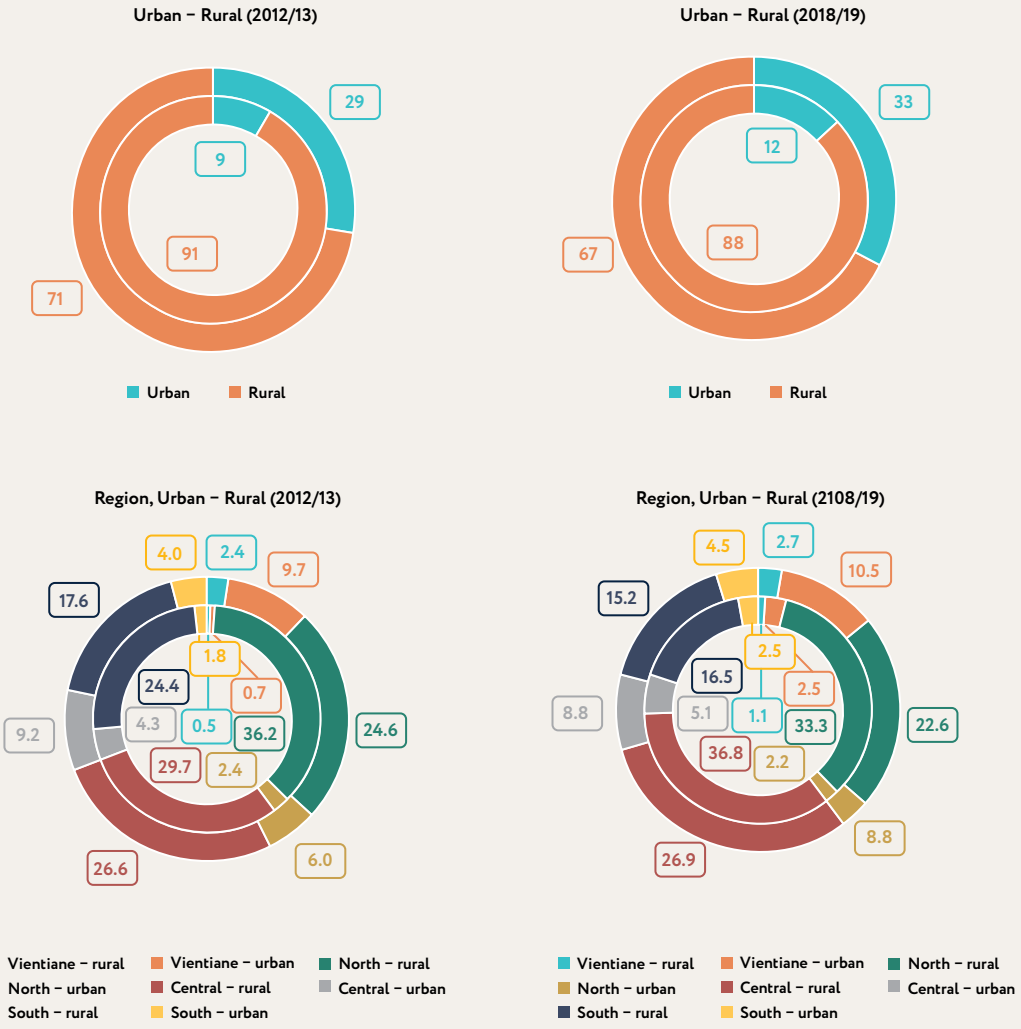
Source: Decomposition as proposed by Ravallion and Huppi (1991).
Note: The 2008–13 period is based on the 1997/98 poverty methodology and the 2013–19 period is based on the 2018/19 poverty methodology.

more rapid poverty reduction in rural areas, while the latter was because of an increase in urban poverty. A remarkable contribution by northern Lao PDR was driven by urban poverty reduction. Despite an increase in the population share from 6 percent in 2012/13 to 9 percent in 2018/19, the proportion of the poor found in urban areas of the northern region remained at 2 percent.

Five large provinces account for more than half of the poor in Lao PDR. Savannakhet alone accounts for 20.6 percent of the poor population (Figure 3.5). The other four provinces with a higher share of the poor are Oudomxay (8.7 percent), Khammuane (8.3 percent), Saravane (8.0 percent), and Luangprabang (7.7 percent). These provinces have large shares of the population as well as high poverty incidence. Although Sekong has the highest provincial poverty rate of 30.6 percent, it accounts for 3 percent of the poor because of its sparse population. Likewise, the highly populated provinces of Vientiane capital and Champasack that have low poverty incidence, together make up 8 percent of the poor despite constituting 23 percent of the population.

FIGURE 3.4

Geographical distribution of the poor and the population by region and urban-rural migration



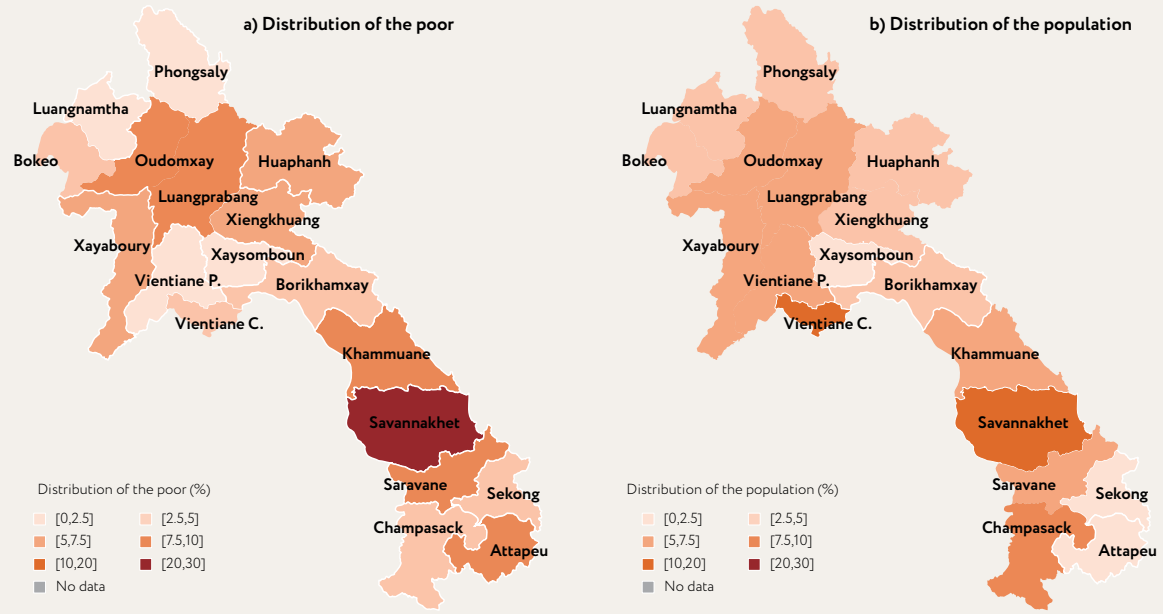
Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The inner ring shows the distribution of the poor. The outer ring shows the distribution of the population. Labels show the percentage of each group among the poor and the population.

Poverty declined rapidly along the China-Myanmar and Cambodia borders. The poverty rate along the China-Myanmar border fell from 21.8 percent in 2012/13 to 13.8 percent in 2018/19, almost catching up to the poverty rate in districts bordering Thailand—historically the wealthiest of the border regions (Figure 3.6a). The decline was driven by poverty reduction in Bokeo, Luangnamtha, and Phongsaly. In contrast, areas bordering Thailand faced the slowest pace of poverty reduction because of rising poverty in Borikhamxay, Khammuane, Vientiane capital, and Xayabury. Along the Cambodia border, the incidence of poverty declined as much as 15.5 percentage points to the same level of districts without international borders (20 percent). The poverty headcount rate remains highest in locations bordering Vietnam at 31.9 percent.

Districts without international borders and those bordering Vietnam, together make up nearly 80 percent of the poor despite constituting 64 percent of the population. The distribution of the poor by border proximity remained relatively unchanged between 2012/13 and 2018/19 (Figure 36b, Figure 3.6c). Despite making up 11 percent of the population, districts bordering Vietnam accounted for 20 percent of the poor. Lao PDR shares the eastern border with Vietnam, extending from Phongsaly in the northern region to Sekong in the southern region. The poor population were concentrated in three provinces bordering central Vietnam—Khammuane, Saravane, and Savannakhet. Districts without international borders constituted a larger fraction of the population in 2018/19 than in 2012/13, with 58 percent of the poor residing in these districts.

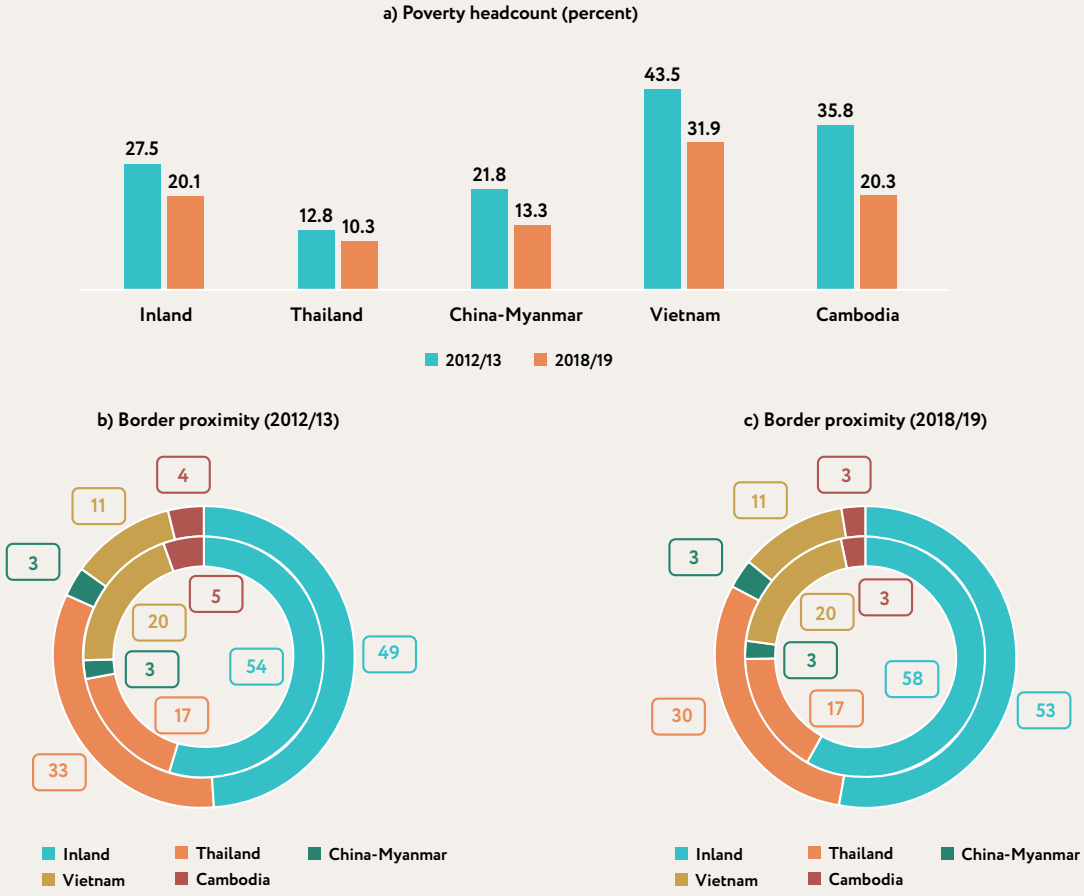
FIGURE 3.5.
Geographical distribution of the poor and the population by province



Source: Authors' calculation based on LECS 6.

FIGURE 3.6

Geographical distribution of the poor and the population by border proximity, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The inner ring shows the distribution of the poor. The outer ring shows the distribution of the population. Labels show the percentage of each group among the poor and the population.

SUMMARY

Rural areas continue to constitute the overwhelming share of the poor, but the catch-up pattern of poverty reduction has led to a significant shift in the spatial distribution of the poor population. The urban share of the poor has increased, and central Lao PDR has become home to a significantly larger share of the poor. Poverty has declined rapidly along the China-Myanmar and Cambodia borders, leaving behind many households in inland areas and in provinces bordering Vietnam. The incidence of poverty is highest among households headed by a person who has not completed lower secondary education, an unemployed person, a self-employed farmer, and a person of the Hmong-Iumien ethnic group. Such households have also experienced the slowest pace of poverty reduction. As a result, the gaps have widened.

4 BEYOND MONETARY POVERTY

Multidimensional poverty measures complement standard monetary measures by providing a more comprehensive picture of people living in poverty. While standard monetary measures, such as consumption, provide a suitable approximate of household well-being, they do not encompass all aspects of well-being. Multidimensional poverty encompasses various deprivations experienced by the poor in their daily lives—such as lack of education, lack of electricity, and poor health. This chapter presents an incidence of multidimensional poverty in Lao People's Democratic Republic (PDR). The multidimensional poverty measure is constructed based on available information from the Lao Expenditure and Consumption Survey (LECS)—LECS 5 and LECS 6. It captures the nonmonetary dimensions of well-being alongside the monetary measure, which include consumption, education, and living standards.[6]

The intensity of deprivation is the weighted average of indicators in which a household is deprived (Table 4.1). It is zero if an individual is not deprived of any dimensions and is one if an individual is deprived of every dimension. A household is considered multidimensionally poor if it is deprived in a third or more of eight weighted indicators or if the intensity of deprivation is larger than 0.33. Given the equal weight of 0.33 assigned to each of the three dimensions, if a household is deprived in at least one dimension, the members are considered multidimensionally poor. Since the monetary dimension is measured using only one indicator, any individuals who are consumption poor will be multidimensionally poor.

6 The approach with three dimensions of well-being that combines the nonmonetary dimensions alongside the monetary measure was proposed in the 2018 PSPR. Three dimensions include consumption, education, and basic infrastructure. In this report, housing and assets are added to the basic infrastructure dimension, making it resemble the living standards dimension of the global multidimensional poverty index developed by the Oxford Poverty & Human Development Initiative) and the United Nations Development Programme. Due to a lack of comprehensive assessments of health outcomes, this dimension is not included but will be explored in more detail in Chapter 5.

TRENDS IN MULTIDIMENSIONAL POVERTY

Trends in multidimensional poverty mirror consumption poverty trends. In 2018/19, 22 percent of the population was multidimensionally poor (Figure 4.1). Between 2012/13 and 2018/19, the incidence of multidimensional poverty declined, with a substantial reduction in rural areas. While the multidimensional poverty headcount rate slightly declined from 9.9 percent to 7.7 percent in urban areas, rural poverty fell by 13.6 percentage points to 28.9 percent.

The northern and southern regions experienced a substantial decline in multidimensional poverty. Similar to the consumption poverty trends, the pace of poverty reduction was slowest in the central region, where the multidimensional poverty headcount rate fell by 6 percentage points to 25 percent. The poverty headcount rate was almost cut in half from 40.1 percent to 23.4 percent in southern Lao PDR and from 42.7 percent to 25.1 percent in northern Lao PDR. In 2018/19, the southern region shows the lowest incidence of poverty both in terms of consumption poverty and multidimensional poverty.

The intensity of multidimensional poverty has declined. Among the multidimensionally poor, the intensity of deprivation can range from 0.33 to 1, where 1 corresponds to a deprivation of all indicators. In 2012/13, half of the multidimensionally poor were severely or very severely deprived (deprived in more than 60 percent of eight weighted indicators). The share of the multidimensionally poor who faced severe deprivations significantly declined to 30 percent in 2018/19 (Figure 4.2).

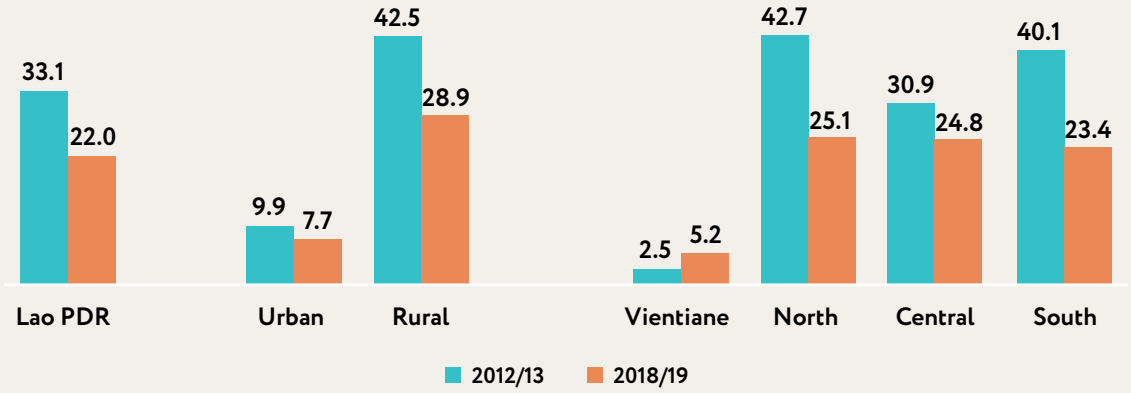
The urban poor who faced severe deprivations have been left behind. The gap among the urban poor has widened. While the share of urban poor people who experienced mild deprivations substantially increased from 33 percent to 60 percent between 2012/2013 and 2018/19, the proportion of those who were severely deprived barely declined. In 2018/19, about 20 percent of the urban poor were still deprived in more than 60 percent of eight weighted indicators. The prospect of escaping poverty was more uniform among the rural poor. The share of the rural poor who lived in severe multidimensional poverty significantly declined by more than one-third, and more among those who faced very severe deprivations.

TABLE 4.1.
Dimensions of poverty

DIMENSION	INDICATOR	DEPRIVED IF...	WEIGHT
Consumption	Household's consumption per capita	Household's consumption per capita is below the poverty line (calculated using the cost of basic needs approach).	1/3
Education	Years of schooling	No household member aged 10 years or older has completed five years of schooling.	1/6
	School attendance	No school-age children are attending school up to the age of 14.	1/6
Living standards	Cooking fuel	A household cooks with paraffin, wood, coal, charcoal, or sawdust.	1/15
	Drinking water	A household does not have access to improved drinking water or safe drinking water is at least a 30-minute walk (roundtrip) from home.	1/15
	Electricity	A household has no electricity.	1/15
	Housing	A household has inadequate housing: the floor is made of earth or clay, the roof is made of grass or leaves, or walls are of natural or rudimentary materials (unbaked bricks, bamboo, tin, or wood).	1/15
	Assets	A household does not own more than one of these assets: radio, TV, telephone, computer, tuk-tuk, bicycle, motorbike, refrigerator, and does not own a car or truck.	1/15

FIGURE 4.1.

Multidimensional poverty headcount rate (percent)

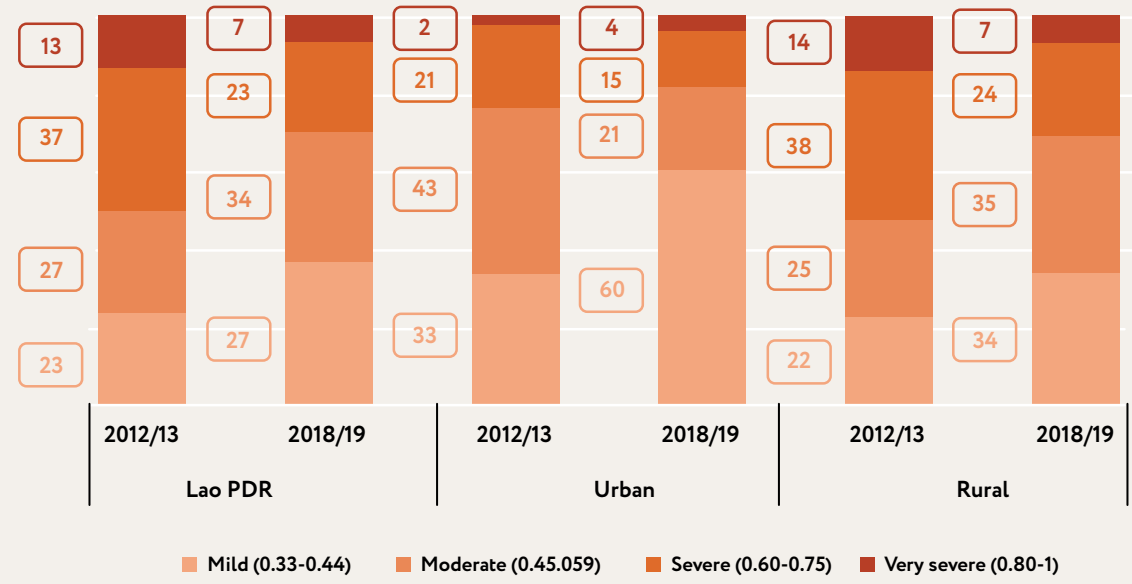


Source: Authors' calculation based on LECS 5 and LECS 6.

Note: Moderate poverty (cutoff > 0.33).

FIGURE 4.2.

Percentage of the multidimensionally poor at different levels of deprivation, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The intensity of multidimensional poverty measured by the average proportion of dimensions in which multidimensionally poor people are deprived (0 =none, 1=all).

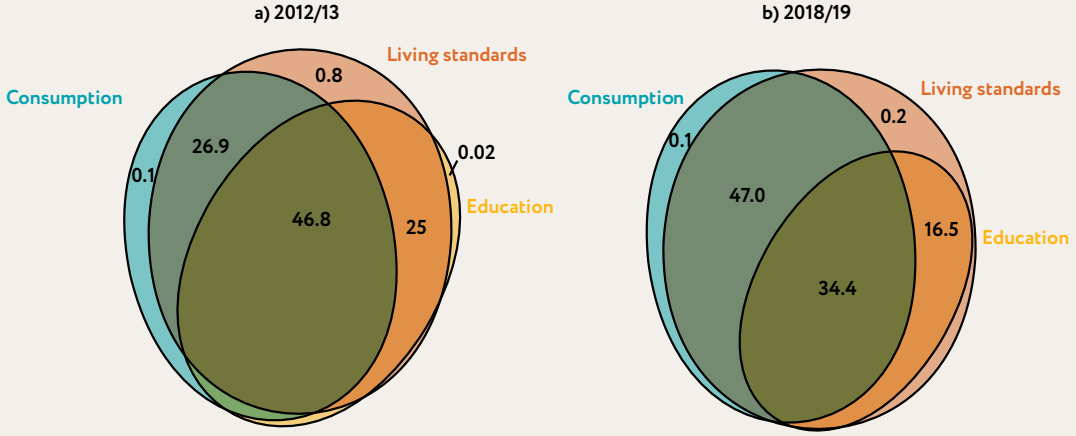
POVERTY BY DIMENSION

There is an overlap between poverty dimensions, suggesting that deprivations are interdependent. More than one-third of the multidimensionally poor are simultaneously deprived in all three dimensions, and only a small proportion of the poor are deprived in only one dimension. About 80 percent of the multidimensionally poor are deprived in the consumption and living standards dimensions, meaning those who are deprived of adequate living standards are also consumption poor (Figure 4.3). Educational deprivations are less prevalent among the multidimensionally poor. Only half of the poor are deprived in the education dimension. However, the correlation between consumption and educational deprivations is rather weak. Approximately one-third of the multidimensionally poor who are deprived in the education dimension are able to generate sufficient income to cross the monetary poverty threshold. Between 2012/13 and 2018/19, the degree of overlap declined, thanks in part to improved access to basic education. In 2018/19, individuals with educational deprivations constituted 51 percent of the multidimensionally poor, a significant decline from 72 percent in 2013. The importance of education became more noticeable. The multidimensionally poor who were deprived in the education dimension became less likely to cross the monetary poverty threshold.

The multidimensionally poor exhibit the highest deprivation levels in cooking fuel, followed by assets, housing, and school attendance. The share of the population who are multidimensionally poor and simultaneously deprived in the cooking fuel dimension was 21 percent in 2018/19, meaning that almost all multidimensionally poor households cooked with paraffin, wood, coal, charcoal, or sawdust (Figure 4.4). The share is significantly lower for other indicators. About 8 percent of the population were multidimensionally poor and deprived in the asset, housing, and school attendance dimensions.

Between 2012/13 and 2018/19, the incidence of deprivations among the multidimensionally poor consistently declined across all indicators. The decline was significant for school attendance and housing. In 2018/19, only 8 percent of the population were multidimensionally poor and did not have their children enrolled in school, compared to 21 percent in 2012/13. The quality of housing materials considerably improved particularly for walls. The share of the population who are multidimensionally poor and use poor-quality wall materials fell from 20 percent to 4 percent between 2012/13–2018/19. Ownership of motorcycles, refrigerators, and televisions substantially increased among the multidimensionally poor. However, ownership of vehicles, computers and telephones is a lot less common. Almost all multidimensionally poor households do not own these assets.

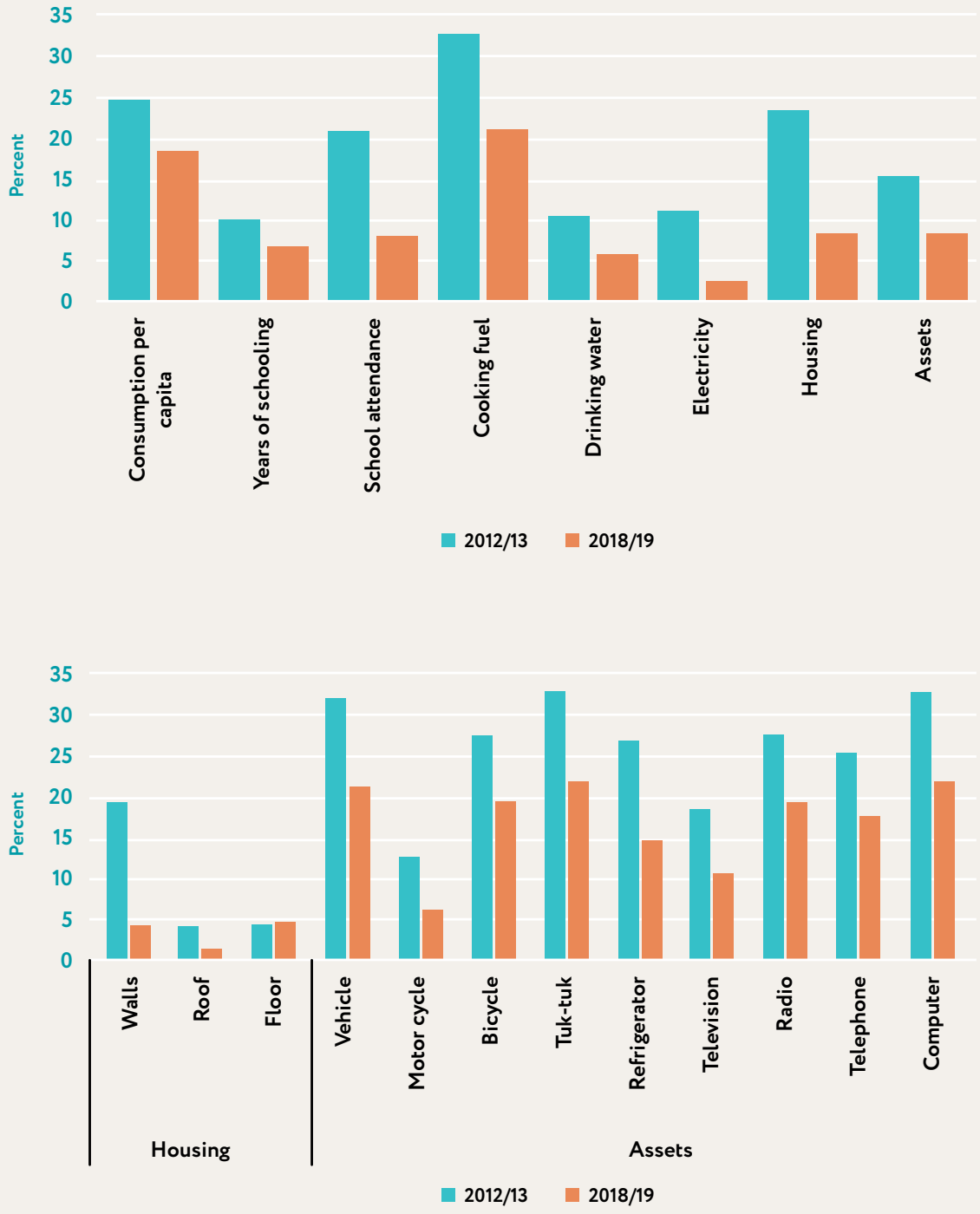
FIGURE 4.3.
Percentage of the multidimensionally poor across dimensions



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 4.4.

Percentage of the population who are multidimensionally poor and simultaneously deprived in each indicator



Source: Authors' calculation based on LECS 5 and LECS 6.

Note: Censored headcount ratio of an indicator is the percentage of the population who are multidimensionally poor and simultaneously deprived in each indicator.

COMPARISON OF POVERTY MEASURES

The difference between the monetary and the multidimensional measures is the result of nonmonetary deprivations. This pattern arises because the weight assigned to the consumption dimension is one-third, and a household is considered multidimensionally poor if the intensity of deprivation is larger than 0.33. Therefore, any individuals who are consumption poor will be automatically multidimensionally poor. The difference between the consumption poverty and multidimensional poverty headcount rates then reflects the incidence of nonmonetary deprivations.

Nonmonetary poverty is more pronounced in rural areas where living standards remain low. In rural areas, the correlation between consumption and the other two dimensions is weak, meaning those who are deprived in these two dimensions are not deprived in the monetary dimension. The weak correlation is mainly a result of lower school attendance and living standards in rural areas such as the use of wood and charcoal in cooking fuel and poor housing conditions. This adds 5 percent of the population to the count of the multidimensionally poor (Figure 4.5).

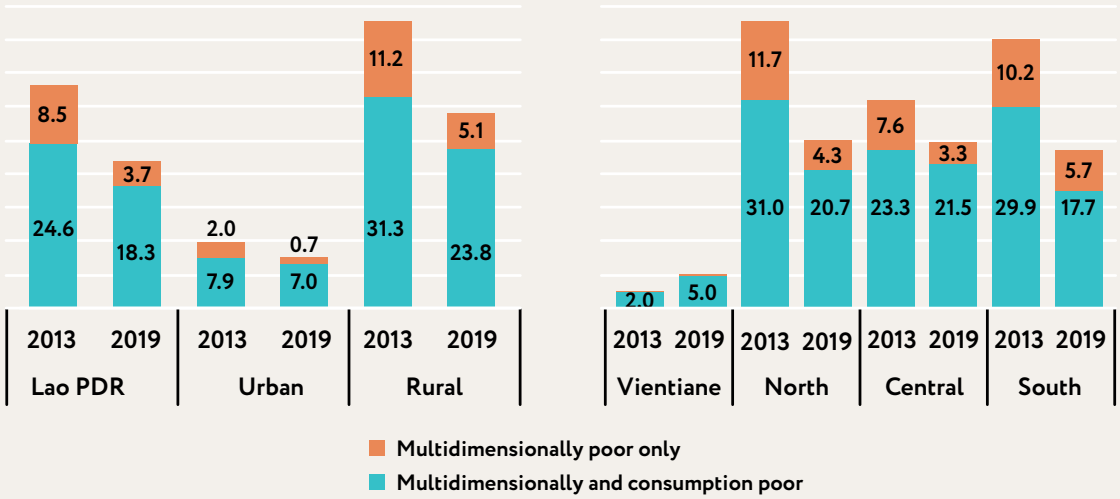
The northern region experienced a substantial decline in both consumption poverty and multidimensional poverty during 2012/13–2018/19. Nonmonetary poverty contributed to a significant decrease in multidimensional poverty incidence in northern Lao PDR. Between 2012/13 and 2018/19, the multidimensional poverty headcount rate declined by 18 percentage points. Nearly half of this decrease was driven solely by an improvement in nonmonetary indicators. In contrast, multidimensional poverty reduction in the southern region was mainly driven by the monetary dimension as household consumption greatly improved. In the central region, household consumption stagnated, and much of decline was due to households becoming less deprived in the education and living standards dimensions.

Both monetary and multidimensional poverty measures show that the incidence of poverty is high in Attappeu, Oudomxay, Savannakhet, and Sekong. The multidimensional poverty measure constructed based on information from the LECS surveys depicts the same poverty situation as the global multidimensional poverty index (MPI) developed by the Oxford Poverty and Human Development Initiative and the United Nations Development Programme. The differences between the two approaches are i) the global MPI uses the health dimension instead of the consumption dimension, and ii) the global MPI is based on the 2017 UNICEF's Multiple Indicator Clusters Survey (MICS) survey while the multidimensional poverty measure is based on the 2018/19 LECS survey. Multidimensional poverty incidence is highest in the Attapeu, Oudomxay, Savannakhet, and Sekong provinces, followed by the Huaphanh, Khammuane, Phongsaly, Saravane, and Xiengkhuang provinces (Figure 4.6).

A stark difference between monetary and multidimensional poverty measures is found in Phongsaly. While the consumption poverty rate in Phongsaly province is among the lowest in Lao PDR, the province experiences relatively high multidimensional poverty incidence. Geographical factors may have contributed to this difference. Phongsaly province is located in the remote northern mountainous region, where infrastructure penetration is limited. However, its geographic location has made the province the primary trade gateway between Lao PDR and China. The agricultural sector, the mainstay of the people of the province, has also gained traction recently, thanks to higher demand for tea and spices.

FIGURE 4.5.

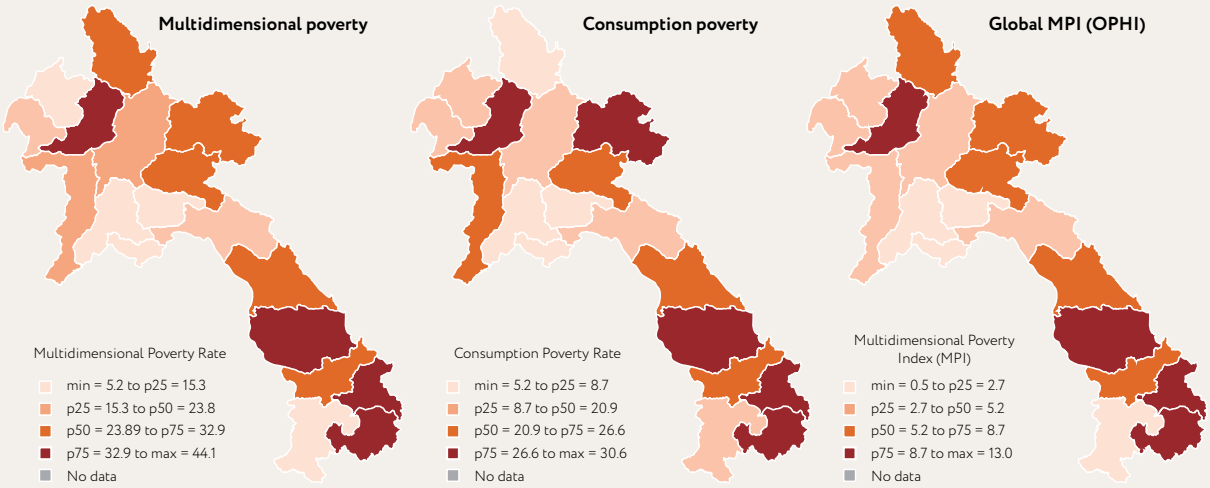
Percentage of the consumption poor and the multidimensionally poor



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 4.6.

Consumption poverty and multidimensional poverty by province



Source: Authors' calculation based on the 2018/19 LECS 6 for multidimensional poverty and consumption poverty. Oxford Poverty & Human Development Initiative (2017) for the global multidimensional poverty index.

Note: MPI = multidimensional poverty index; OPHI = Oxford Poverty & Human Development Initiative.

SUMMARY

Multidimensional poverty—which includes consumption, education, and living standards—presented in this chapter captures the nonmonetary dimensions of well-being alongside the monetary measure. The incidence of multidimensional poverty declined between 2012/13 and 2018/19, especially in rural areas, northern, and southern Lao PDR, mirroring a decline in consumption poverty. In the northern and central regions, more than half of the decline was driven by an improvement in nonmonetary indicators. In the southern region, the monetary dimension contributed more to the decline. School attendance and housing improved the most among nonmonetary indicators. There are some variations in asset ownership. Although many multidimensionally poor households have motorcycles, refrigerators, and televisions, almost all of them do not own vehicles, computers, or telephones.

Geographically, areas with a high incidence of multidimensional poverty tend to have a high consumption poverty headcount rate. However, there are some discrepancies. Nonmonetary poverty is generally more pronounced in rural areas where living standards remain low. Phongsaly provides a good example of the differences. Although the consumption poverty rate in Phongsaly province is among the lowest in Lao PDR, the province experiences relatively high incidence of multidimensional poverty.

5 HEALTH AND NUTRITION

Food insecurity and poor nutrition and health are part of the vicious cycle that limits economic productivity and earning ability and creates a negative feedback loop. The impact is more critical for the early years. Poor children are more likely to experience food insecurity and malnutrition, which is proven to be linked to poor health and low productivity later in life. Poor health is a contributing factor to low incomes and poverty. People with chronic health problems are frequently poor because of their inability to generate income, and people who suffer health shocks often become poor after losing their job. When a sudden decline in health occurs, access to affordable and quality healthcare services is critical to ensure that the vulnerable are not pushed deeper into poverty because of healthcare financial burdens or the inability to work and generate income. This chapter explores the incidence of nutritional deficiency, food insecurity, and food poverty in Lao People's Democratic Republic (PDR) and the barriers to healthcare services among the poor.

NUTRITION AND FOOD SECURITY

Almost 20 percent of the population experienced moderate to severe food insecurity in 2018/19 (Table 5.1). Food insecurity measures a lack of regular access to enough safe and nutritious food for normal growth and development, and an active and healthy life, which may be due to the unavailability of food or lack of resources to obtain food. Food insecurity can be experienced at different levels of severity. In 2018, 10 percent of the population experienced moderate food insecurity, meaning they reduced the quality or quantity of their food and are uncertain about their ability to obtain food due to a lack of money or other resources.[7] This experience could increase the risk of malnutrition, such as stunting in children. Additionally, 9 percent of the population faced severe food insecurity, meaning they had run out of food and, in the most extreme cases, had gone for a day or more without eating.

7 FAO.

The incidence of food insecurity is higher in rural areas and the central region. In 2018, nearly one-fourth of the rural population experienced moderate to severe food insecurity compared to 11 percent of the urban population. Urban people were also less likely to experience any forms of food insecurity. However, the nature of food insecurity in urban and rural areas differs significantly from one another. Rural populations usually are able to produce their own food, while urban people are dependent on food purchased from markets and are vulnerable to adverse food price shocks. For rural areas, the emphasis should be placed on agricultural performance, while in urban areas, the focus is on price volatility and market stability. Urban dwellers are highly dependent on markets for their food demands and are vulnerable to adverse food price shocks. The prevalence of moderate to severe food insecurity was highest in the central region at 25 percent compared to 3 percent in Vientiane capital and about 20 percent in the northern and southern regions.

Households in the central region, however, have a higher quality diet than their counterparts in the northern and southern regions. The Food Consumption Score (FCS) measures dietary diversity, which is critical to ensure adequate intake of essential nutrients. More than 90 percent of the population has acceptable dietary diversify (Table 5.2). However, this masks disparities across regions. The share of the population with an acceptable food consumption score is highest in the Vientiane capital at 100 percent, followed by the central region (97 percent). Households in the northern region have the lowest nutrient intake, with 12 percent of the population at risk for nutritional deficiencies.

Food insecurity and nutritional deficiency are more common among low-income populations. Approximately one-third of households from the bottom quintile have experienced moderate to severe food insecurity, compared to 7 percent from the top quintile (Figure 5.1a). Food-insecure and low-income people can be especially vulnerable to poor nutrition due to additional risk factors associated with inadequate household resources. Nutritional deficiency is concentrated among the bottom quintile, with 13 percent of households having less than acceptable dietary diversity compared to the national average of 6 percent.

Children, for whom malnutrition is especially detrimental to health and development in the short and long terms, are more likely to be food insecure. Children under the age of two are more likely to live in food-insecure households. One-fourth of them are food insecure compared to 17 percent of adults (Figure 5.1b). Less than half of children age 6 to 23 months receive minimum dietary diversity (LSB 2018a). Inadequate food intake can impair a child's health and learning ability. Inadequate nutrient intake resulted in undernutrition among children in Lao PDR especially among its under-five population. One in every three under-five children were stunted (LSB 2018a). The likelihood of being stunted was higher among ethnic minorities and in the northern region.

TABLE 5.1.

Food insecurity experience scale (percent of population), 2018/19

LOCATION	NO EXPERIENCE	MILD FOOD INSECURE	MODERATE FOOD INSECURE	SEVERE FOOD INSECURE
National	69	12	10	9
Urban	80	9	5	6
Rural	63	14	12	11
Vientiane capital	92	5	2	1
North	70	10	10	10
Central	58	17	14	11
South	71	11	8	10

Source: LECS 6.

Note: The Food Insecurity Experience Scale is an index that was developed by the Food and Agriculture Organization. The questions focus on self-reported food-related behaviors and experiences associated with increasing difficulties in accessing food due to resource constraints.

TABLE 5.2.

Food consumption score (percent of population), 2018/19

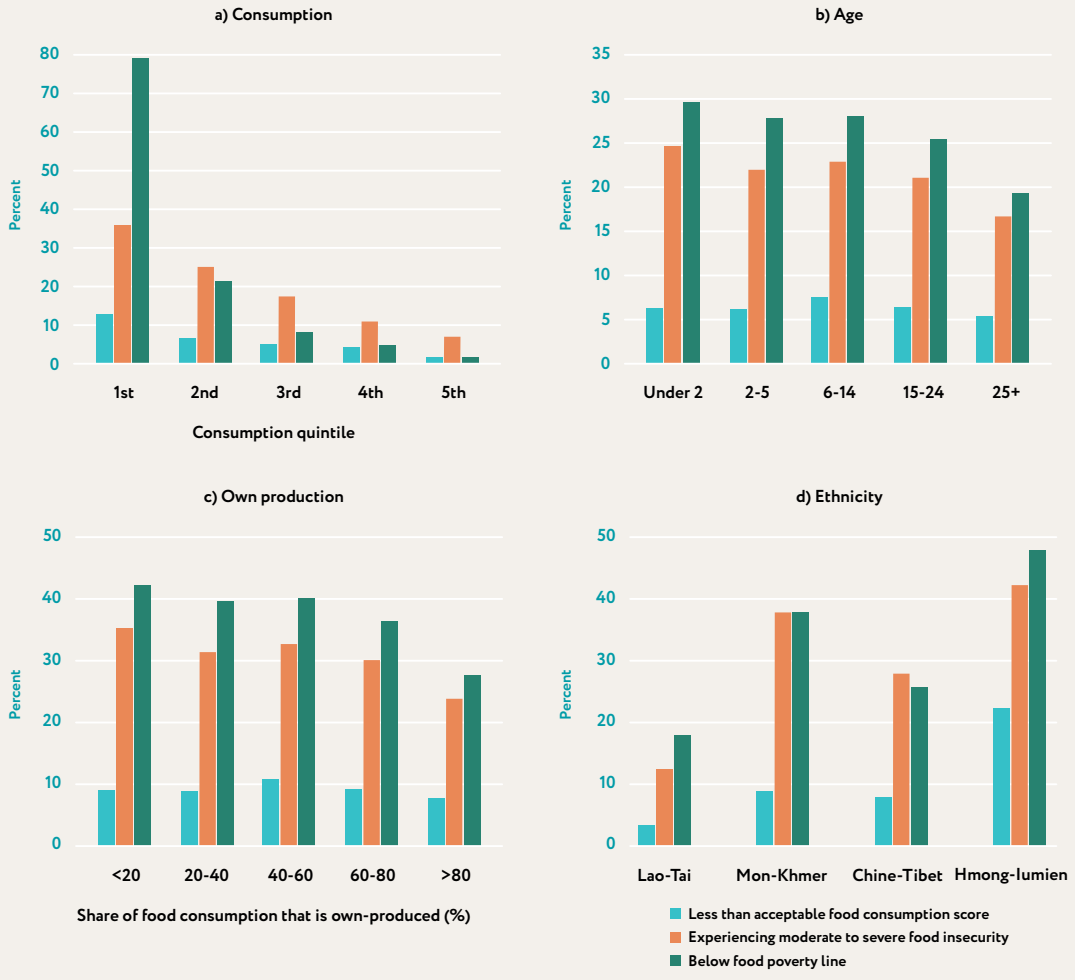
LOCATION	POOR	BORDERLINE	ACCEPTABLE
National	2	4	94
Urban	1	3	96
Rural	2	5	93
Vientiane capital	0	0	100
North	4	8	88
Central	1	2	97
South	2	4	94

Source: LECS 6.

Note: The Food Consumption Score (FCS) is an index that was developed by the World Food Programme. The FCS aggregates household-level data on the diversity and frequency of food groups consumed over the previous seven days, which is then weighted according to the relative nutritional value of the consumed food groups. Based on this score, a household's food consumption can be further classified into one of three categories: poor, borderline, or acceptable.

FIGURE 5.1.

Nutritional deficiency, food insecurity and food poverty by socioeconomic group



Source: Authors' calculation based on LECS 6.

The Hmong-Iumien are at higher risk for nutritional deficiencies than other ethnic groups. A poor-quality diet is the most common among the Hmong-Iumien. About 20 percent of Hmong-Iumien households have less than acceptable dietary diversity compared to less than 10 percent among other groups (Figure 5.1d). The incidence of food insecurity and food poverty is also noticeable. Despite usually having adequate diet diversity, the Mon-Khmer are at risk of malnutrition from food security as they sometimes have to reduce the quality of their food due to lack of money or other resources. The Lao-Tai have the lowest risk of nutritional deficiencies.

Households who are heavily reliant on their home-produced foods have a low-quality diet. More than half of households who are highly dependent on their own-produced food for consumption are food insecure. The likelihood is five times larger than households that are almost entirely reliant on food purchased from markets. Dietary diversity is also significantly lower among the former, with 15 percent of households having inadequate nutritional diversity compared to only 3 percent of the latter (Figure 5.1c). Access to markets and changing farming practices from subsistence to commercial agriculture, thus, are essential to strengthen food security and prevent malnutrition.

HEALTHCARE SERVICES

Access to healthcare services is more limited among low-income households. Access to affordable and quality health services ensures healthier people and prevents the vulnerable from being pushed into poverty because of financial burden or the inability to work due to ill health. In general, barriers to health services include i) geographic barriers to access to health services; ii) financial barriers due to high cost of care or inadequate insurance coverage; iii) cultural and language barriers for patients and providers; and iv) gender barriers. These barriers vary based on socioeconomic status and tend to be more pronounced among the poor and vulnerable.

It is more difficult for low-income households to access healthcare facilities. The average travel time to the nearest hospital is much higher in rural areas without road access, at about an hour compared to 35 minutes in rural areas with road access and 10 minutes in urban areas (Figure 5.2b). For some remote villages, it can take several hours. Because the poor tend to live in remote areas and sometimes without road access, it takes an average of 43 minutes for the bottom quintile to get to the nearest hospital, significantly longer than 15 minutes for the top quintile (Figure 5.2a). As a result, transportation costs are financial burdens for low-income households, and issues such as the availability and affordability of transport can prevent people with health problems from seeking medical care. The likelihood of an individual from the bottom quintile seeking care from a modern health provider when ill is 15 percent compared to 25 percent of the top quintile (Figure 5.3). The gap is significantly lower for hospital utilization.

The Chine-Tibet face greater barriers to accessing healthcare facilities than other ethnic groups. Although all ethnic groups experienced improvements in healthcare access, disparities in access to healthcare facilities remain due to differences in geography. For example, the average travel time to the nearest hospital is much higher for the Chine-Tibet, at about an hour compared to 40 minutes for the Mon-Khmer, 30 minutes for the Hmong-Iumien, and 20 minutes for the Lao-Tai (Figure 5.2c). The difference is mainly because the Chine-Tibet live in the remote mountainous areas in the northern region.

Difficulties in accessing health services impacted maternal and child health. About 73 percent of maternal deaths occur due to direct obstetric causes (Say et al. 2014). Proper medical attention during delivery can prevent complications and infections that can cause maternal mortality. Although the maternal mortality ratio declined to 185 per 100,000 live births in 2017, it remains higher than other countries in the region.[8] In Lao PDR, only two-thirds of births are delivered in a health facility and attended by skilled health personnel (LSB 2018a). The proportion is significantly lower in rural villages without road access (38 percent), and among the poorest wealth quintile (34 percent) and ethnic minorities (43 percent for Chine-Tibet pregnant women). After delivery, 44 percent of mothers and newborns receive postnatal care. Likewise, the proportion is substantially lower in rural villages without road access (24 percent), and among the poorest wealth quintile (27 percent) and ethnic minorities (23 percent for the Chine-Tibet). These factors combined have contributed to early

8 Forty-three and 160 per 100,000 live births in Vietnam and Cambodia, respectively (World Development Indicators, World Bank).

childhood mortality. In 2017, the under-five mortality rate was 46 per 1,000 live births. High incidence of under-five mortality was observed in rural villages without road access, and among the poorest wealth quintile, the Chine-Tibet and the Mon-Khmer, with a rate of 60 deaths per 1,000 live births.

As a result, low-income households are less likely to seek medical care from hospitals. They rely mostly on traditional medicines and health centers. In contrast, high-income households tend to seek medical care from central, provincial hospitals, private healthcare providers, or from overseas. About 40 percent of hospital visits at the central and regional levels are from people in the top decile. Meanwhile, the top two deciles account for 40 percent of hospital visits at the provincial level (Figure 5.4).

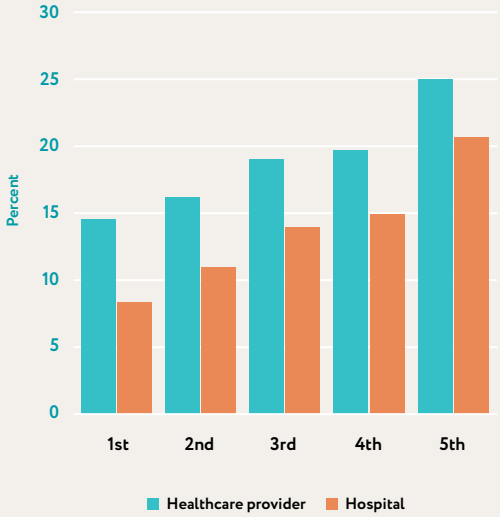
Rural households generally seek medical care from health centers and district hospitals, while hospitals at the provincial and central levels are more restricted to high-income households. Health centers and district hospitals equally serve households from all income groups. Low-income households, however, are less likely to seek medical care from hospitals at the central and provincial levels, with the top two deciles constituting 40 percent of these hospital visits (Figure 5.5).

FIGURE 5.2.
Access to healthcare facilities (Average time to nearest hospital in minute)

Source: Authors' calculation based on LECS 6.

FIGURE 5.3.

Percentage of individuals with health problems seeking medical care

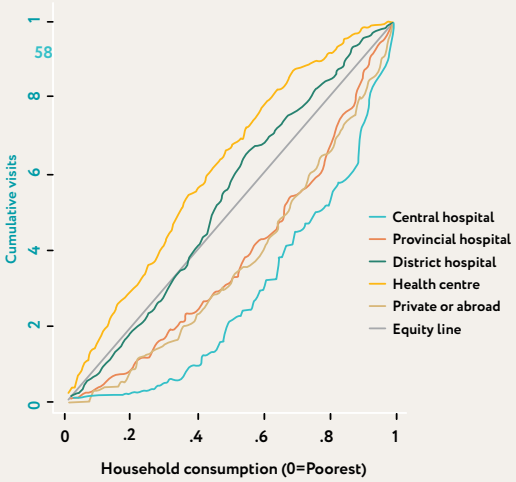


Source: Authors' calculation based on LECS 6.

Note: Hospitals include private and public hospitals. Healthcare providers include hospitals, health centers, and overseas health-care providers

FIGURE 5.4.

Type of healthcare providers by consumption percentile.



Source: Authors' calculation based on LECS 6.

Note: Both outpatient care and hospital stay. Healthcare in Lao PDR is predominately delivered by public healthcare providers, at four levels of organization: hospitals at the central level, hospitals at the provincial level, hospitals at the district level, and health centers at the community level.

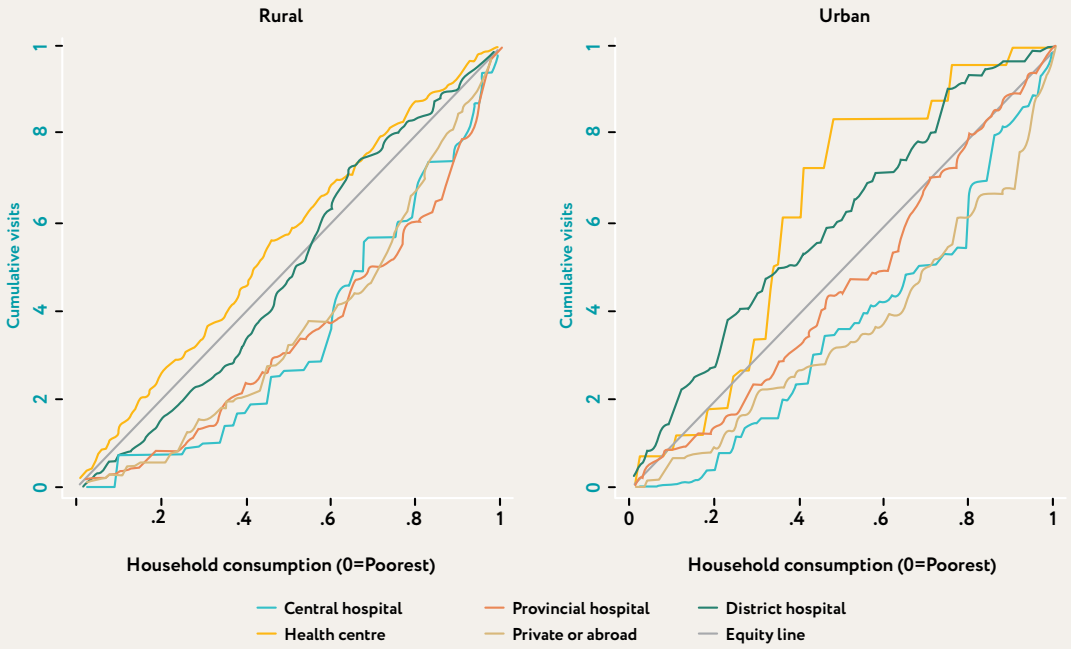
Provincial hospitals broadly reach urban households from all income groups. Provincial hospitals are more accessible in urban areas than in rural areas. As a result, in urban areas, their services are not restricted to only high-income households. Nevertheless, medical care from central hospitals, private healthcare providers, and overseas are still less accessible for low-income households in urban areas. Utilization of healthcare facilities also vary by type of services. The top two deciles generally do not seek inpatient care from health centers while they constitute 50 percent of outpatient care at central hospitals (Figure 5.6).

Ethnic disparities in access to healthcare facilities manifest in the type of healthcare providers chosen by each ethnic group. The Chine-Tibet living in remote areas primarily rely on traditional medicines, health centers, and district hospitals. Less than 10 percent of this ethnic group seek medical care from central and provincial hospitals (Figure 5.7). In contrast, more than one-fourth of Hmong-Iumien and Lao-Tai people regard hospitals at the central and provincial levels as their main healthcare providers. Medical care from private providers and overseas are more common among the Lao-Tai than ethnic minorities.

Affordability of healthcare services has substantially improved thanks to the introduction of national health insurance, a step towards achieving universal health coverage. National health insurance (NHI) was introduced in 2016, increasing the coverage of social health protection schemes to 94.3 percent. Almost full population coverage was reached through various health insurance schemes combined. To access care under NHI, patients pay a low co-payment at the facility level ranging from ₭N 5,000–30,000. More than half of the population from the bottom 40 percent are covered by NHI or community-based health insurance (CBHI), which is a voluntary insurance scheme targeting workers in informal employment and the self-employed (Figure 5.8). Higher-income groups are mostly covered by the National Social Security Fund (NSSF)—called the State Authority for Social Security for civil servants and the Social Security Organization for private sector employees. The NSSF covered about 70 percent of people from the top two quintiles.

FIGURE 5.5.

Type of healthcare providers by consumption percentile and urban-rural area

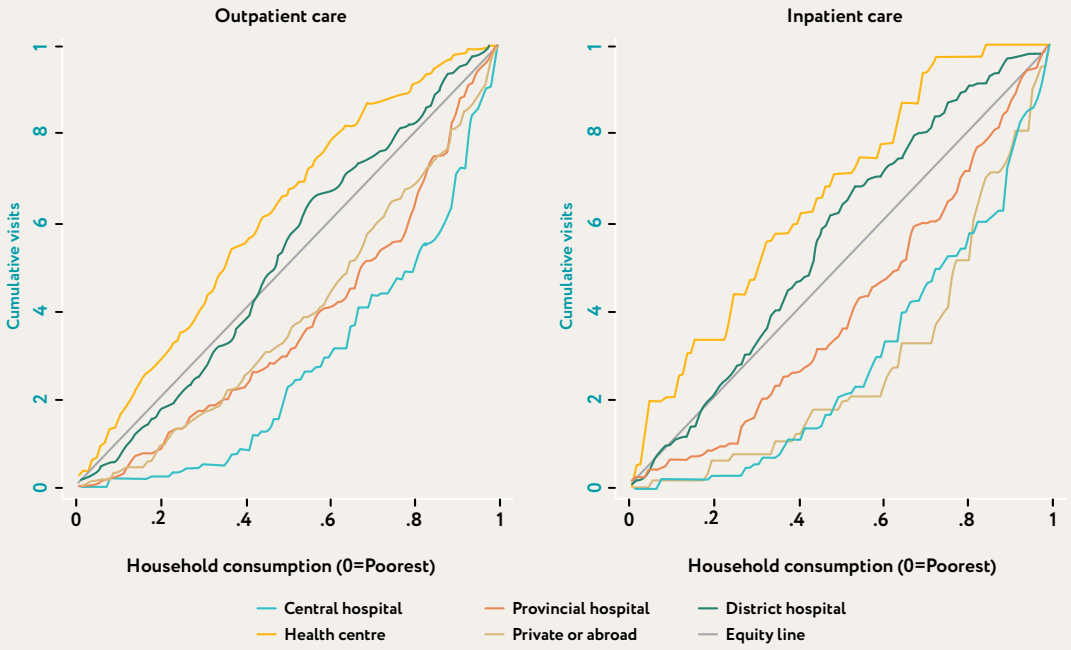


Source: Authors' calculation based on LECS 6.

Note: Both outpatient care and hospital stay. Healthcare in Lao PDR is predominately delivered by public healthcare providers, at four levels of organization: hospitals at the central level, hospitals at the provincial level, hospitals at the district level, and health centers at the community level.

FIGURE 5.6.

Type of healthcare providers by consumption percentile and service



Source: Authors' calculation based on LECS 6.

FIGURE 5.7.
Main healthcare providers by ethnicity

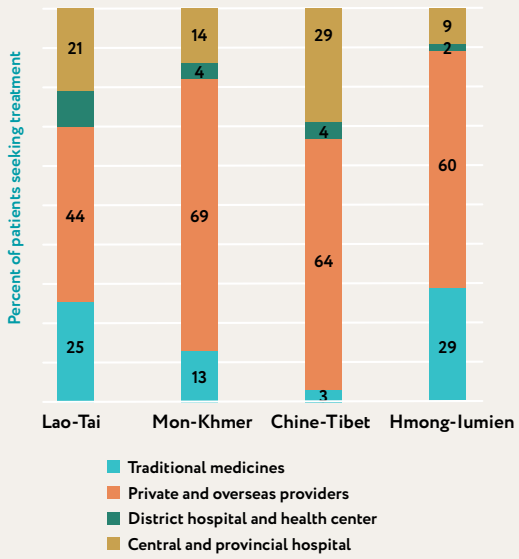
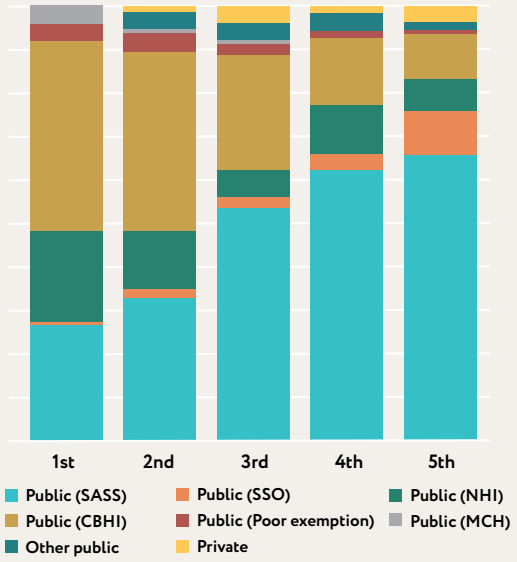


FIGURE 5.8.
Health insurance coverage by consumption quintile



Source: Authors' calculation based on LECS 6.

Note: CBHI = community-based health insurance; MCH =maternal and child health; NHI = national health insurance; SASS = State Authority for Social Security; SSO = Social Security Organization.

FIGURE 5.9.
OOP health care payments

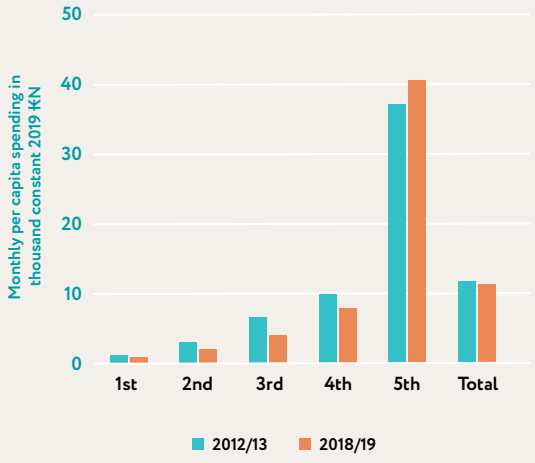
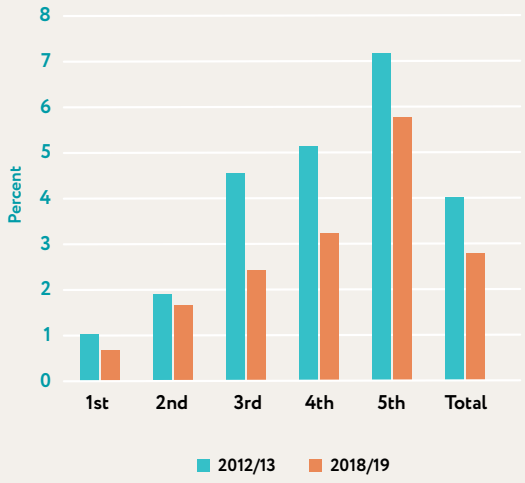


FIGURE 5.10.
Incidence of catastrophic spending (using a 10 percent threshold)



Source: Authors' calculation based on LECS 5 and LECS 6.

Note: OOP = out-of-pocket.

Out-of-pocket (OOP) spending on medical care fell across all groups except for the richest quintile. Individuals in the richest quintile of the population spent almost 30 times more on medical care than those in the poorest quintile in 2012/13. The gap widened to almost 50 times in 2018/19 when the average spending of individuals from all consumption groups declined except for the richest quintile whose healthcare spending per person grew (Figure 5.9). OOP spending in the bottom 60 percent fell by one-third, on average, while it increased by 10 percent for the top quintile. Several factors could have contributed to this widening spending inequality, such as i) the introduction of the NIH, which increased financial protection for low-income households; ii) higher growth in the utilization of health services by the rich; and iii) a shift toward more expensive health providers such as private healthcare providers, or from overseas by the rich.

The risk of catastrophic healthcare payments has declined in recent years. OOP health spending can be expressed as a fraction of total household consumption to indicate the financial burden imposed by having to pay for health care. An excessive financial burden of healthcare can be catastrophic if it leads to households having to reduce the consumption of other goods and services. Between 2012/13 and 2018/19, the ratio of OOP health spending to total household consumption declined across all consumption quintiles. Likewise, the proportion of households that spend more than 10 percent of total expenditure on healthcare (the catastrophic threshold) fell from 4.0 percent in 2012/13 to 2.8 percent in 2018/19. The declines were more noticeable among the top 60 percent (Figure 5.10). For the bottom 40 percent, the low utilization of health services implies that the benefits of having national health insurance could be small (Figure 5.3).

SUMMARY

Against the backdrop of poverty reduction, food and nutrition insecurity remain pressing problems in Lao PDR. The problems are more pronounced among low-income households in rural areas who rely mostly on home-produced foods. Ethnic minorities are at high risk of experiencing food insecurity (reducing the quantity or quality of food due to lack of money or other resources), with the Hmong-Iumien facing additional health risks from poor-quality diets. The most alarming aspect of food and nutrition insecurity is that children, for whom malnutrition is especially detrimental to health and development in the short and long terms, are more likely to live in food- and nutrition- insecure households.

Affordability of healthcare services has improved thanks to the introduction of national health insurance; yet other barriers to accessing healthcare facilities remain, especially among low-income households. Transportation and awareness barriers can prevent people with health problems from seeking medical care. These barriers are greater among low-income and Chine-Tibet households in rural areas. They are less likely to seek medical treatment, or if they are, these households rely mostly on traditional medicines and health centers. Expanding healthcare facilities and raising health awareness are therefore critical to improve access to healthcare services and break the vicious cycle of poverty originated from ill health.

6 EVOLUTION OF HOUSEHOLD INCOME: A TALE OF TWO SECTORS

Poverty reduction is linked to the economy undergoing an economic transformation. While rapid and sustained economic growth is essential for poverty reduction, the process that drives growth determines the rate at which poverty declines and how growth benefits are distributed across population groups. Economic transformation occurs when people move from lower- to higher-productivity activities. It is the key to sustainably creating more productive jobs, enabling all groups to benefit from the growth process and increasing their chances to escape from poverty. On the one hand, enhancing productivity within sectors is essential. Raising productivity within the agriculture sector can improve the quality of jobs and income among the poor, for example. On the other hand, moving out of agriculture and into industry and services can provide another escape route from poverty. Labor markets provide the main transmission channel for this process, because the poor depend on labor income.

This chapter analyzes the relationship between growth, economic transformation, and poverty reduction in Lao People's Democratic Republic (PDR). The analysis unbundles the growth process during the past decade. It explores how it has translated into the evolution of household livelihoods and income through the functioning of the labor market, which, in turn, has driven the process of poverty reduction. Lao PDR's resource-driven growth has generally not resulted in sufficient job creation and economic transformation in the past, limiting its impact on poverty reduction.

OVERVIEW OF THE LABOR MARKET IN LAO PDR

The Lao PDR labor market is characterized by a significant share of agricultural workers facing seasonal fluctuations in labor demand and the increasing role of public sector jobs. In 2018/19, farm employment accounted for 50.7 percent of the labor force, with an additional 12.5 percent of workers unemployed due to seasonality and more than 90 percent of them living in agricultural households (Table 6.1). The public sector employed 6.7 percent of the labor force, a substantial increase from 2.3 percent a decade ago. This was accompanied by a decline in wage jobs provided by the private sector. Overall, wage jobs are limited, making up 15 percent of the labor force. The Lao PDR labor market is thus characterized by high informality.

In recent years, labor market conditions have not been favorable enough to support inclusive growth. Labor force participation declined while unemployment rose. Unemployment increased from 4.1 percent in 2012/13 to 15.7 percent in 2018/19 (Table 6.1, Figure 6.1). Although most of the increase was driven by seasonal unemployment—meaning workers did not work because it was the off-season for agriculture—the fraction of workers unemployed for reasons unrelated to the seasonality of agricultural activities rose from 0.6 percent to 3.2 percent during the same period. Between 2012/13 and 2018/19, the labor force participation rate declined from 84 percent to 72 percent. This decline in the labor force participation rate suggests that the unemployment rate understated slack in the labor market.

The urban unemployment rate rose with the expanding population. Labor force participation is generally lower in urban areas, where households also derive income from nonlabor sources and youth tend to pursue higher education. Unemployment is also higher in urban areas due to more time invested in job search and job queues. Between 2012/13 and 2018/19, the labor force participation rate declined from 81 percent to 67 percent. The urban unemployment rate rose with the expanding population and reached 9.4 percent 2018/19. Rural areas saw an increase in the unemployment rate from 4.8 percent to 18.9 percent as well, mainly driven by seasonal unemployment.

TABLE 6.1.
Composition of the labor force (percent)

	2007/08	2012/13	2018/19
Public sector wage worker	2.3	3.0	6.7
Private sector nonfarm wage worker	10.4	12.3	8.5
Farm wage worker	0.4	1.7	0.6
Nonfarm self-employed	8.3	12.4	13.2
Farm self-employed	25.2	31.0	25.9
Nonfarm unpaid family worker	9.5	6.5	5.2
Farm unpaid family worker	40.7	29.0	24.3
Unemployed	3.1	4.1	15.7
of which seasonal unemployment	2.3	3.5	12.5
of which unseasonal unemployment	0.8	0.6	3.2

Source: Authors' calculations based on LECS 4, LECS 5, and LECS 6.

Note: For comparability across the three Lao Expenditure and Consumption Surveys (LECS), the definition of labor force participation and unemployment is different from that adopted by the 2017 Labour Force Survey (LFS). In this report, the unemployment rate is defined as the percentage of the labor force that is actively looking for work and not seeking work but waiting for reply or recall by an employer or for the busy season to work (seasonal unemployment). Own-use production workers are considered as employed. The LECS sample is distributed over a 12-month period, unlike the LFS, which was conducted between July and August 2017. When excluding own-use production workers from the labor force, the July-August unemployment rate for LECS 6 was estimated at 9.3 percent, comparable to 9.4 percent estimated from the 2017 LFS (LSB 2018b). See Annex 2 for the monthly unemployment rate based on LECS 6.

Unemployment remains high among youth with a high incidence of unemployment among the well-educated labor force suggesting some degree of voluntary unemployment. A rise in overall unemployment has resulted in a reduction of the supply of jobs at every age group and skill level. Nevertheless, striking outcomes are observed among certain groups (Figure 6.1). The youth unemployment rate alarmingly rose to 21.8 percent in 2018/19 from 5.5 percent in 2012/13. A large fraction was not related to seasonality reasons as youth tend to search for jobs in the nonfarm sector. A substantial fall in the labor force participation rate among youth between the ages of 15 and 24 also suggests that many young people chose to remain in school, partly because of a desire to pursue higher education and the declining labor market prospects of less-educated youth. Between 2012/13 and 2018/19, the youth labor force participation rate fell by 20 percentage points from 77.5 percent to 57.8 percent, compared to a 12-percentage point decline at the national level. Unemployment due to unseasonal reasons remains high among skilled workers too. It steadily increases from 2 percent among workers who have not completed primary education to 5.4 percent among workers who have completed upper secondary education or higher. Seasonal unemployment substantially increased, but mostly among low-skilled workers who tend to engage in agricultural activities.

Employment prospects also became less promising for women. Although an increase in the unemployment rate was comparable between males (from 3.9 percent to 15.1 percent) and females (from 3.8 percent to 16.3 percent), female labor force participation dropped significantly. Between 2012/13 and 2018/19, female labor force participation decreased by 15.8 percentage points from 81.8 percent to 66.0 percent, compared to a 9-percentage point decline in male labor force participation from 87.4 percent to 78.4 percent.

FIGURE 6.1.
Evolution of the labor market

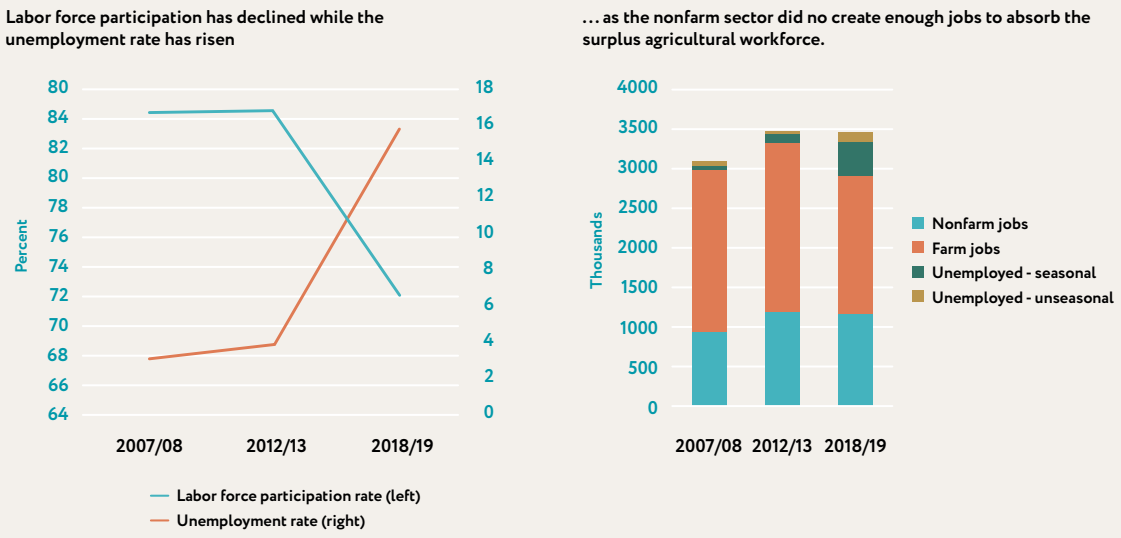
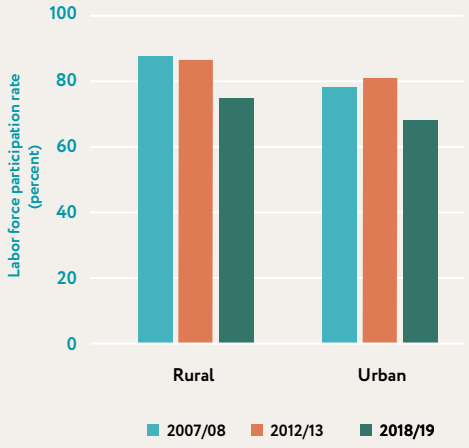
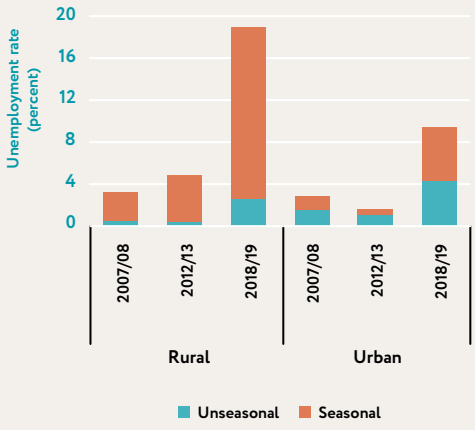


FIGURE 6.1. *CONTINUED*

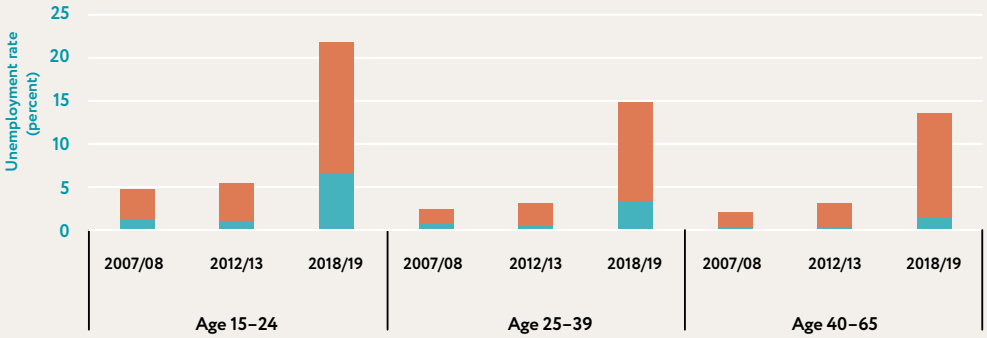
Labor force participation has declined in both urban and rural areas,



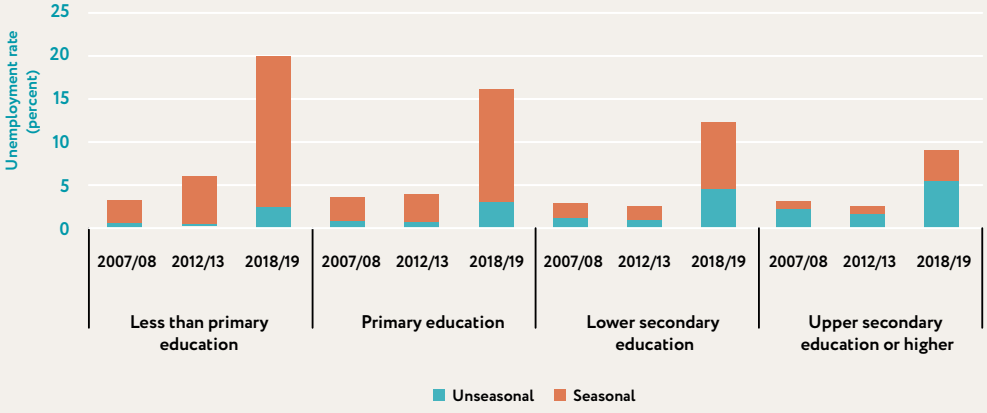
… while the urban unemployment rate has increase with the expanding population and rural workers are facing fluctuation in labor demand



Youth unemployment remains high and …



… the market shows a degree of voluntary unemployment among high-skilled workers.



Source: Authors' calculation based on LECS 4, LECS 5, and LECS 6.

POVERTY REDUCTION AND ECONOMIC TRANSFORMATION

In Lao PDR, economic transformation out of agriculture has been gradual. The services sector's value-added share has stagnated despite having absorbed labor from agriculture. Over the last decade, resources gradually shifted out of agriculture. The share of agriculture in GDP declined from 22 percent to 15 percent between 2008 and 2019, accompanied by a shift of labor out of the agricultural sector into the services sector (Figure 6.2, Figure 6.3). The share of agriculture in total employment fell from 70 percent to 60 percent, while the services sector increased its employment share from 20 percent in 2008/09 to 30 percent in 2018/19. The share of services in GDP, however, stagnated, suggesting that much of the movement was into lower-productivity employment, which lowered the relative productivity of the sector.

Meanwhile, a boom in the industry sector driven by natural resources created limited jobs. The industry sector's value-added share increased from 28 percent to 36 percent between 2008 and 2019, led by mining, utilities, and construction. Mining sector exports increased after 2005 followed by a sharp increase in electricity exports since 2015. In 2016, electricity exports accounted for about two-thirds of hydropower generation and represented 15 percent of the country's export earnings. Copper and electricity accounted for a combined 40 percent of exports. Despite a decade-long expansion in output, the sector's contribution to total employment remained unchanged at 10 percent (Figure 6.2 and Figure 6.3).

A lack of employment creation in the expanding industry sector and a slow shift of labor from agriculture to services with small gains in productivity contributed to a slow pace of poverty reduction. Over the last decade, the industry and services sectors did not create enough jobs to absorb the surplus agricultural workforce. This mismatch arose from the growing industry sector, driven by hydropower generation, creating very few jobs while output in the job-absorbing services sector grew slowly. Surplus rural workers thus found themselves confined to agriculture or without work when leaving agriculture to find jobs in nonfarm sectors. Sustained growth was associated with an increase in output per worker and the gradual shift of the surplus agricultural workforce to other sectors rather than employment creation. Employment composition shifted from agriculture and manufacturing into services, while the resource sectors, including mining and utilities, remained an enclave (Figure 6.4).

FIGURE 6.2.
Sector share of GDP

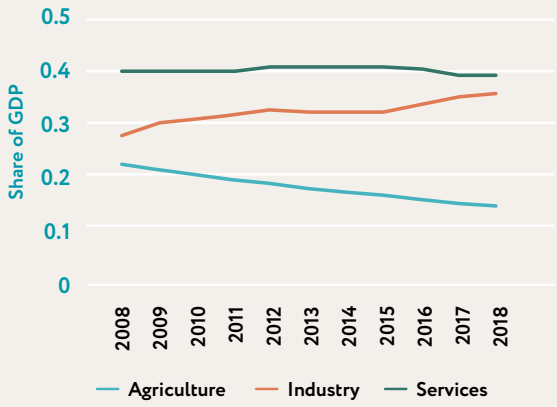
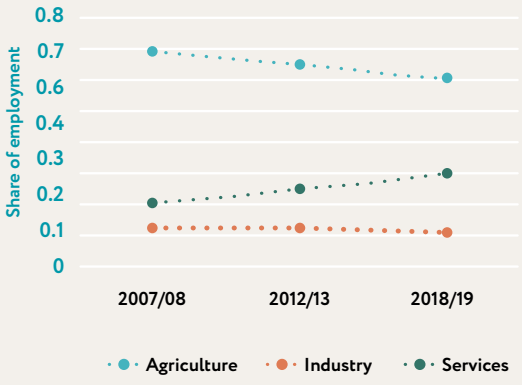


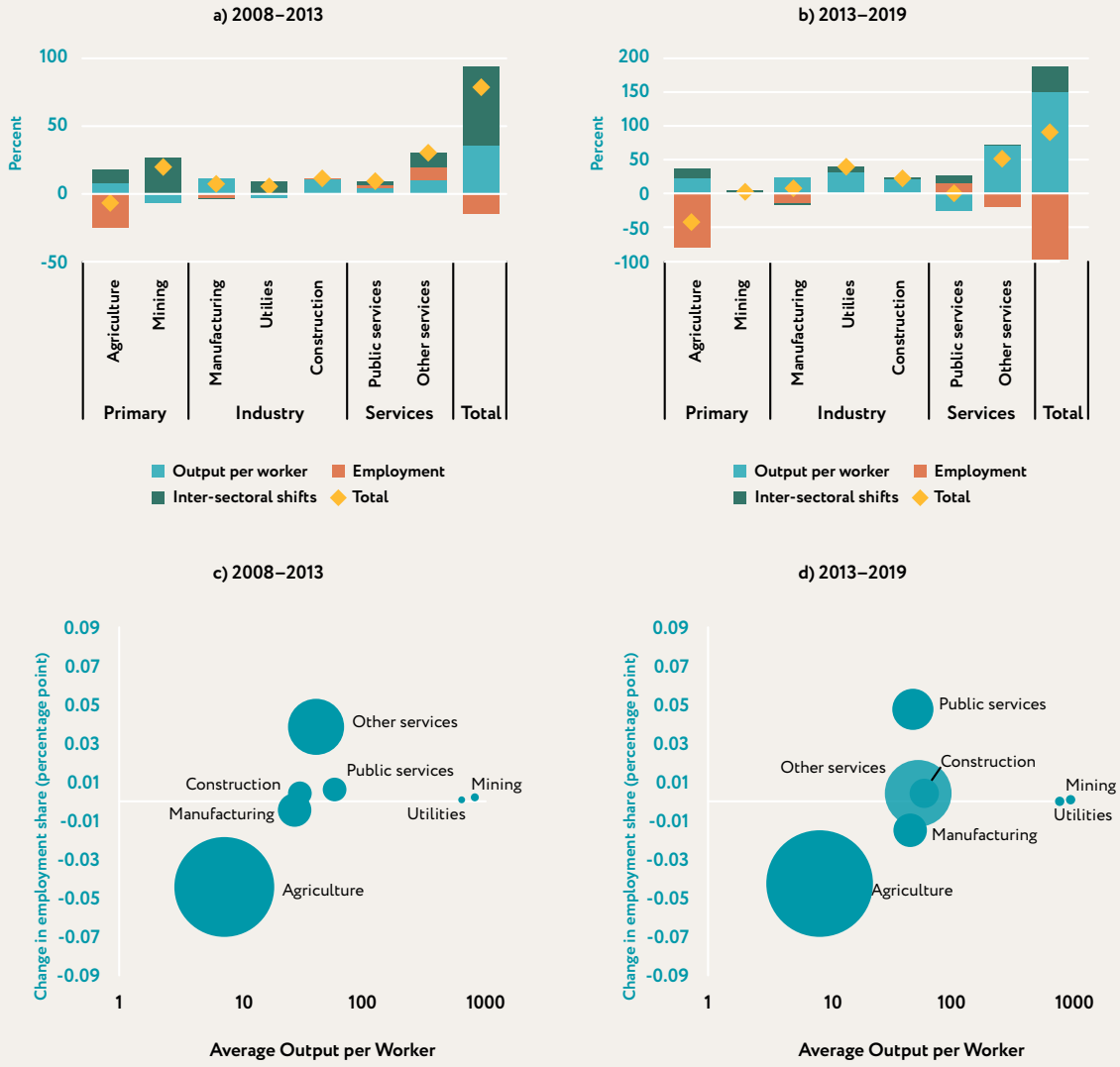
FIGURE 6.3.
Sector share of employment



Sources: Government of Lao PDR; and authors' calculation based on LECS 4, LECS 5 and LECS 6.

FIGURE 6.4.

Percentage contribution to total growth in GDP per capita by sector



Sources: Government of Lao PDR; and authors' calculation based on LECS 4, LECS 5, and LECS 6.

Note: Job growth decomposition. Bubble size reflects sectoral employment shares at the end of the subperiod..

The transformation pattern of economic and labor structures was slightly different between 2008–13 and 2013–19. In the early years, sustained growth of nearly 8 percent a year was accompanied by an increase in output per worker across non-resource sectors and intersectoral labor movements (Figure 6.4a). The shift of labor out of agriculture was absorbed mostly by the nongovernment services sector. However, productivity gains and growth contributions were small (Figure 6.4c). Rather, it was a minor shift of labor into the high output-per-worker resource sectors (mining and utilities) that contributed largely to growth.

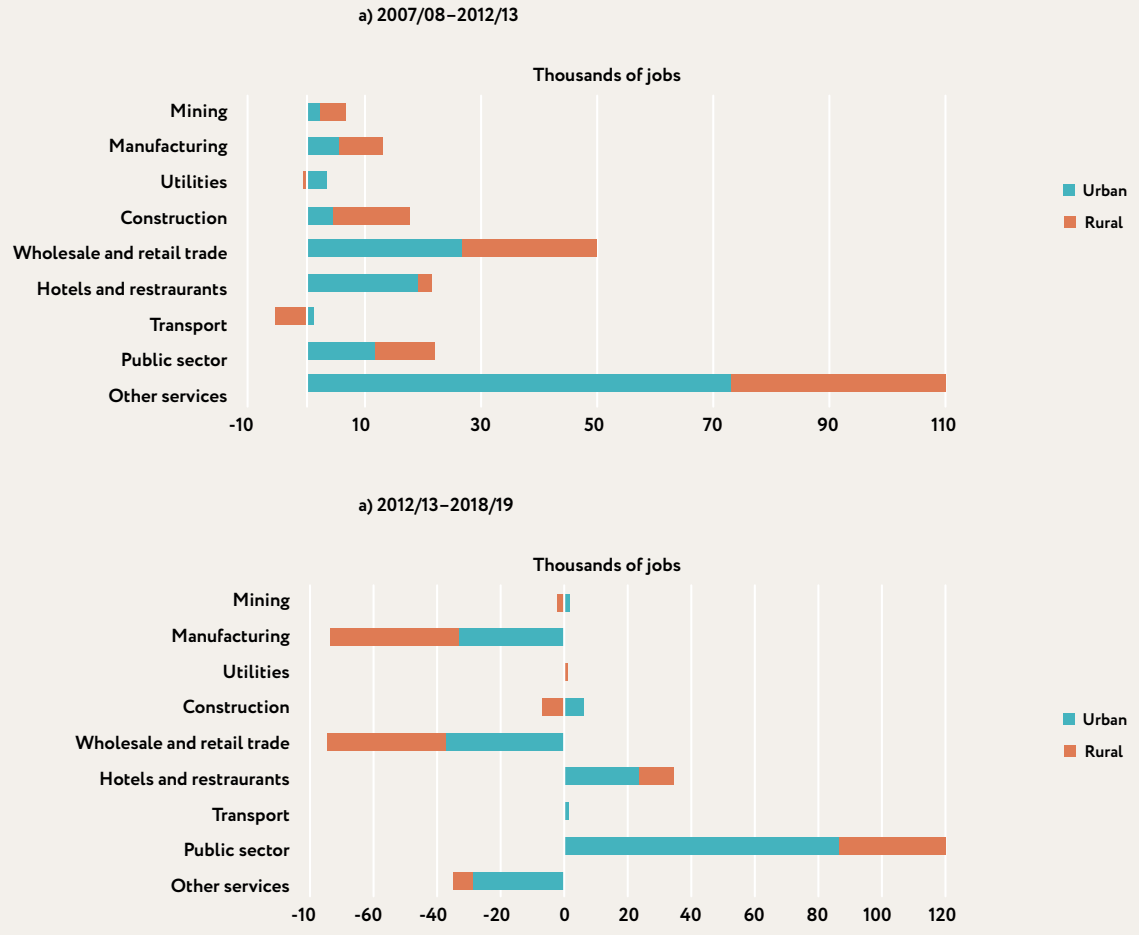
Between 2013 and 2019, the manufacturing sector shed jobs, while job creation in the nongovernment services sector stagnated (Figure 6.4d). Growth remained high at 7.2 percent per annum, but its pattern did not create favorable enough labor market conditions to facilitate the transition out of agriculture. The hotel and restaurants sector continued to grow, but the retail trade sector shed jobs, almost wiping out jobs created during 2008–13. Manufacturing experienced a significant decline especially in wood products, which previously depended on illegal logging which is now more strictly enforced. Other sectors also stagnated. It was the public sector that created jobs.

The output gain from sector reallocation of labor was small as movement into the public sector was less likely to be productivity-enhancing. As a result, growth during 2013–19 was dominated by an increase in output per worker within sectors—in industry and private services as they shed jobs—rather than intersectoral labor movements from low to high productivity sectors.

Nonfarm job creation shows disparities across urban and rural areas. Between 2007/08 and 2012/13, approximately 250,000 jobs were created, 60 percent in urban areas and 40 percent in rural areas. During the past six years, urban areas created about 20,000 nonfarm jobs, but job destruction in rural areas impacted almost 40,000 jobs, leading to net job losses.

Jobs in manufacturing and retail trade were shed in both rural and urban areas, while an expansion of employment opportunities in the hospitality and the public sectors were mostly urban. Job creation between 2007/08 and 2012/13 was across sectors, with a large share of construction jobs created in rural areas and a disproportionate share of service jobs created in urban areas (Figure 6.5a). During the past six years, jobs in manufacturing and retail trade were shed in both rural and urban areas (Figure 6.5b). Many manufacturing jobs were lost across the board led by the manufacturing of wood products, partially as a result of a ban on illegal logging. Self-employment or micro and small enterprises (MSEs) in retail trade industries also disappeared, especially in central and southern Lao PDR (see Chapter 8).[9] Job losses were concentrated among salespersons and owners of retail shops. The reason for

FIGURE 6.5.
Absolute change in nonfarm jobs by sector



Sources: Authors' calculation based on LECS 4, LECS 5, and LECS 6.

9 Self-employment and MSEs are used interchangeably, referring to own-account workers with or without employees.

this reduction is not clear but could include loss of market share to supermarkets (both domestic and cross-border shopping) or declining economic activities in the region. Jobs in construction shifted toward urban areas. A switch from wage jobs to self-employment was associated with a shift from large-scale construction (buildings) to small-scale construction (specialized activities). The public sector created 120,000 jobs, and the hospitality sector created 34,000 jobs, of which 70 percent were in urban areas.

The growth pattern in recent years, characterized by limited private job creation and a slow transition out of agriculture, has shaped the evolution of household livelihoods. A lack of nonfarm employment opportunities means that agricultural households have fewer options to diversify their livelihoods and the main route out of poverty would be to improve farm productivity and income. Although jobs are limited, an increase in output per worker, if accompanied by an improvement in labor earnings, could mean higher income for household breadwinners fortunate enough to keep their jobs.

HOUSEHOLD LIVELIHOOD AND INCOME SOURCES

Households have become less diversified in their livelihoods, partly because of limited nonfarm job creation. Family members of farming households and surplus workers seek jobs outside the agricultural sectors. Between 2007/08 and 2012/13, they found jobs in construction and the nongovernment services sector, including hotels and restaurants, wholesale and retail trade, and small and personal services. The result was a 10 percentage points increase in households deriving income from nonfarm wage jobs between 2007/08 and 2012/13. The trend completely reversed in recent years as a decline in nonfarm employment limited households' opportunities to maintain their livelihood diversification strategies (Table 6.2, Figure 6.6). Between 2012/13 and 2018/19, many wage jobs in manufacturing and services were shed, while the public sector, where hiring rose, did not provide employment opportunities for most workers from farming households because it tends to require a different skill set or level of education. The share of households deriving income from farm and nonfarm jobs thus declined from 44 percent in 2012/13 to 26 percent in 2018/19. The share of households with only a single source of income, when comparing farm against any nonfarm labor income sources, rose accordingly. Three quarters of the bottom 20 percent of households only had a single income source.

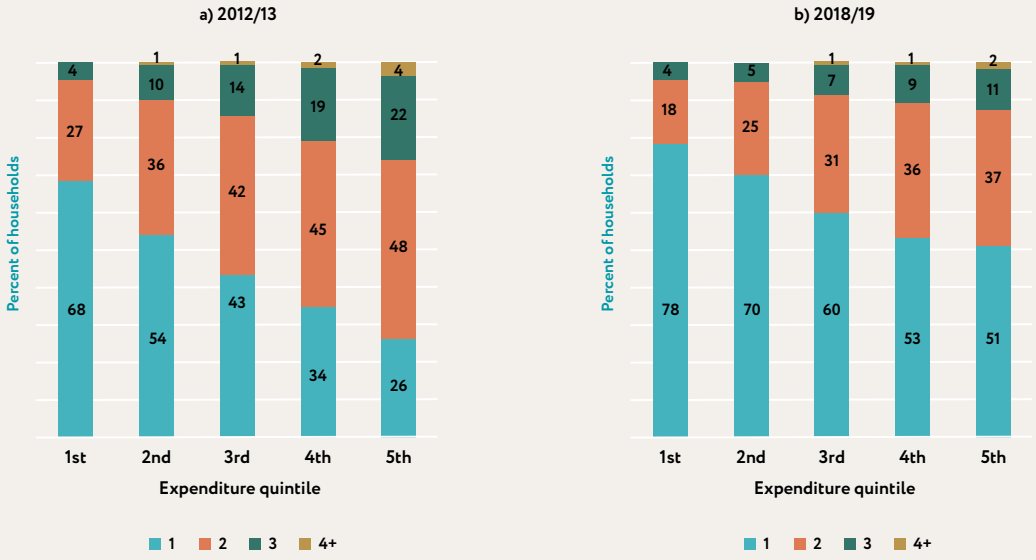
TABLE 6.2.
Households' livelihood participation (percent)

	LAO PDR			POOR		
SOURCE	**2007/08**	**2012/13**	**2018/19**	**2007/08**	**2012/13**	**2018/19**
Farming	92	89	81	95	99	94
Nonfarm wage	30	39	30	18	22	13
Nonfarm self-employed	22	31	16	12	12	4
Remittances	10	11	14	4	6	8
Other incomes	3	2	6	1	1	5
Livelihood portfolio						
Farming and nonfarm jobs*	36	44	26	22	28	15
Farming only*	55	46	56	73	71	79
Nonfarm jobs only*	7	10	15	4	1	2
Nonlabor income only	1	0	4	1	0	4

Note: *and/or nonlabor income.

Despite unfavorable off-farm labor market conditions, some households managed a full livelihood transition out of agriculture. Among households with undiversified livelihood strategies, most became dependent on agriculture as their only source of labor income. At the same time, some households managed to fully transition into the nonfarm sector as earnings and productivity among remaining nonfarm workers increased. The fraction of households whose livelihoods depended on both farm and nonfarm jobs declined by 18 percentage points, while the share of households relying on farm employment and nonfarm employment as their only source of labor income increased by 10 and 5 percentage points, respectively. The rest relied on nonlabor income—mostly remittances—as their primary source of livelihood.

FIGURE 6.6.
Number of livelihood sources by expenditure quintiles



Source: Authors' calculation based on LECS 4, LECS 5, and LECS 6.

TABLE 6.3.
Households' livelihood participation by urban-rural (percent)

	URBAN			RURAL		
SOURCE	2007/08	2012/13	2018/19	2007/08	2012/13	2018/19
Farming	75	66	56	99	99	94
Nonfarm wage	57	63	51	19	30	20
Nonfarm self-employed	37	57	27	16	20	10
Remittances	14	12	11	8	10	15
Other incomes	7	5	11	1	1	4
Livelihood portfolio						
Farming and nonfarm jobs*	52	52	29	30	41	24
Farming only*	23	14	26	69	58	70
Nonfarm jobs only*	23	33	38	1	1	4
Nonlabor income only	2	1	7	0	0	2

Note: *and/or nonlabor income.

Households that exclusively relied on nonfarm sector incomes escaped poverty, but for the majority remaining in agriculture, the lack of livelihood diversification increased vulnerability and raised the risk of falling deeper into poverty. Households that lack diversified livelihood opportunities and depend mostly on farm income remain poor. In contrast, farming households that are more diversified are better off than households that are specialized in agriculture. Households engaged in agriculture with some other type of activity—wage jobs, self-employed jobs, or both—have higher levels of consumption per capita than those engaged only in agricultural production (Figure 6.6). The share of poor households whose livelihood depends only on farming increased from 71 percent to 79 percent between 2012/13 and 2018/19.

Remittances, both domestic and international, have become increasingly crucial as a source of livelihood for households. Migration is one of the many livelihood strategies that households employ to diversify their sources of livelihood. A recent decline in nonfarm job opportunities in domestic labor markets especially in rural areas coupled with significant wage differentials are strong push factors for rural-urban migration and international migration. Remittances channeled by migrants have become a source of livelihood for nearly 15 percent of households. For many, remittances are the main source of income. Remittances are considered as a potential substitute for nonfarm employment, especially in rural areas. The share of rural households receiving remittances steadily increased and almost doubled during the past decade (Table 6.3).

A significant livelihood transition into nonfarm activities occurred mostly in urban areas, while the lack of nonfarm opportunities prevented rural livelihood diversification. Over the past decade, the share of urban households engaging in farm and nonfarm sectors considerably declined from 52 percent in 2007/08 to 29 percent in 2018/19, while the share of those specialized in nonfarm activities almost doubled (Table 6.3). Nearly 40 percent of urban households have managed a full livelihood transition out of farming activities. In rural areas, livelihood diversification improved between 2007/08 and 2012/13, but has since reversed course as many nonfarm jobs were shed, resulting in a 12-percentage points increase in the share of exclusively farming households. With 70 percent of households engaging only in farming activities in 2018/19, rural households remain highly vulnerable to agricultural income shocks. There is immense disparity between urban and rural households in the evolution of a livelihood strategy.

WHAT DRIVES POVERTY REDUCTION?

Given the evolution of livelihoods, a Shapley decomposition analysis of poverty changes is employed to show the factors behind poverty reduction between 2012/13 and 2018/19. Household per capita income is the sum of family members' income from different sources divided by the number of household members. Thus, household per capita income is determined by i) the share of adults living in a household; ii) average farm income per adult; iii) the share of adults employed in the nonfarm sector; iv) average nonfarm income per employed adult; v) the amount of remittances received; and vi) the amount of other nonlabor income, such as capital income and social transfers (other incomes).[10] Household per capita income may increase or decrease as these income components change. If they increase among the poor, the poverty rate declines. The applied decomposition method helps to determine what role employment, earnings, transfers, and other factors play in the reduction of poverty. The results, presented in Figure 6.7, show how these factors contributed to poverty reduction in Lao PDR between 2012/13 and 2018/19.

Between 2012/13 and 2018/19, the lack of job opportunities weighed negatively on progress in reducing poverty. Jobless growth slowed down poverty reduction as employment is the main channel for households to participate in and benefit from the growth process (Figure 6.7). Many jobs were shed in previous years led by manufacturing, construction, and small and personal services—sectors most likely to provide an escape route from poverty for farming households. Limited opportunities in the nonfarm sector dragged down progress in poverty reduction nationally by about 2 percentage points and by as much as 4 percentage points in urban areas. This issue shall be explored further in Chapter 8.

10 Due to the seasonality of agricultural production, many households reported farm income from the last completed season without having any household member working in agriculture during the employment reference period (7 days). To accommodate for this discrepancy in farm employment, the average farm income is defined as farm income per adult household member, and nonfarm employment is captured by the share of nonfarm workers among adult household members.

A decline in rural poverty was thus mainly driven by an improvement in farm income because i) poverty had been concentrated among farming households, and ii) nonfarm employment opportunities were limited. All poor households relied on agricultural income in 2012/13. There are two routes to escape poverty for such households—improving agricultural income or moving to the nonfarm sector for higher returns. With the second route closed, poverty reduction was driven by higher income from agriculture, which accounted for 10.9 percentage points of the decline in poverty. This pattern is more prominent in rural areas, where rising farm incomes accounted for 12.8 percentage points of the reduction in poverty, offsetting the negative impact of rising unemployment. Chapter 7 provides an in-depth discussion of the contribution of farm incomes to poverty reduction.

In urban areas, an increase in nonfarm earnings contributed to poverty reduction, but was offset by limited employment opportunities and a declining share of working-age adults among urban households. In 2012/13, although 90 percent of poor urban households engaged in agricultural activities, more than 70 percent of them also derived income from nonfarm activities, compared to 30 percent in rural areas. Between 2012/13 and 2018/19, fewer nonfarm jobs were created in urban areas (20,000 jobs). Livelihood dynamics in urban areas were mixed. Many workers were not able to find nonfarm jobs and remained unemployed, weighing negatively on poverty reduction (Table 6.3, Table 6.4). Their households also became more reliant on farm income. At the same time, some workers who kept their jobs or continue to engage in nonfarm activities received higher returns because declining manufacturing income was partially offset by higher returns from construction and services—consistent with rising output per worker in those sectors (Table 6.3, Table 6.4). Real wages, on average, rose by 8 percent annually during this period. These workers were able to transition out of agriculture. An increase in the average income of both farm and nonfarm activities, thus, contributed to poverty reduction in urban areas. However, the impact was offset by a lack of nonfarm employment opportunity as shall be elaborated in Chapter 8.

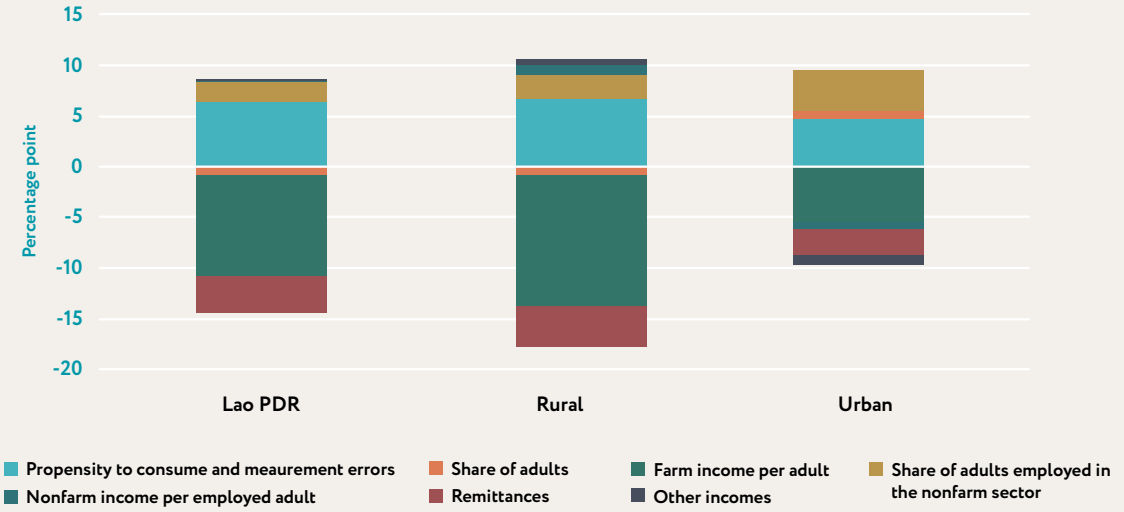
Despite limited opportunities in the local labor market, workers found job opportunities elsewhere and money they sent contributed to poverty reduction. Remittances substantially increased between 2012/13 and 2018/19 (Table 6.4). They accounted for 3.7 percentage points of the reduction in poverty nationally, and 4.1 percentage points in rural areas. Chapter 9 describes in detail the incidence of migration and the amount of remittance flows in recent years, and how they are linked to nonfarm job losses. The impact of social transfers on poverty reduction has been limited as social assistance spending remains low. Social assistance spending accounts for 0.3 percent of GDP, compared to the Association of South East Asian Nations average of 0.5 percent and the lower-income-country average of 1.5 percent (IMF 2018).

The COVID-19 pandemic, thus, could weigh negatively on progress against poverty through two main channels: the employment channel and the remittances channel. The pandemic is expected to stall or reverse progress in reducing poverty as projections presented in Chapter 2 showed. Disruptions in economic activities due to the pandemic and mitigation measures have impacted jobs and household income. Among the hardest-hit areas of the economy were the travel- and tourism-related sectors, including the retail trade, transport, food, and accommodation businesses. A decline in travel and tourism demand is expected to last for at least one quarter and could lead to income loss or even permanent job losses if the crisis is prolonged. The sectors together account for 11 percent of total employment and as much as 22 percent in urban areas. Given that the hospitality sector was the primary source of job creation besides the public sector during previous years, the pandemic will likely add pressures to an already stressed off-farm labor market. The lack of livelihood diversification increased vulnerability to employment shocks and raised the risk of falling deeper into poverty among low-income households.

As migrants return and labor market conditions in destination countries deteriorate, remittances are expected to decline. Already, the pandemic has led to many migrant workers returning home. Meanwhile, migrants who remain abroad will likely remit less than they normally do as their income is also affected. Given the sizable share of remittances in total household income, the loss of remittances could impoverish poor and vulnerable households or push them further into poverty.

FIGURE 6.7.

Contribution of income sources to poverty change, 2012/13–2018/19



Source: Shapley decomposition of changes in income poverty rate as proposed by Azevedo et al. (2013), based on LECS 5 and LECS 6.

Note: For comparability of income estimates between the two surveys, agricultural income is constructed from sales of crops, fish, and forest products and net sales of livestock and poultry; business income is constructed from average monthly sales. Changes in the propensity to consume explain the difference in income and consumption poverty trends, if not measurement errors.

TABLE 6.4.

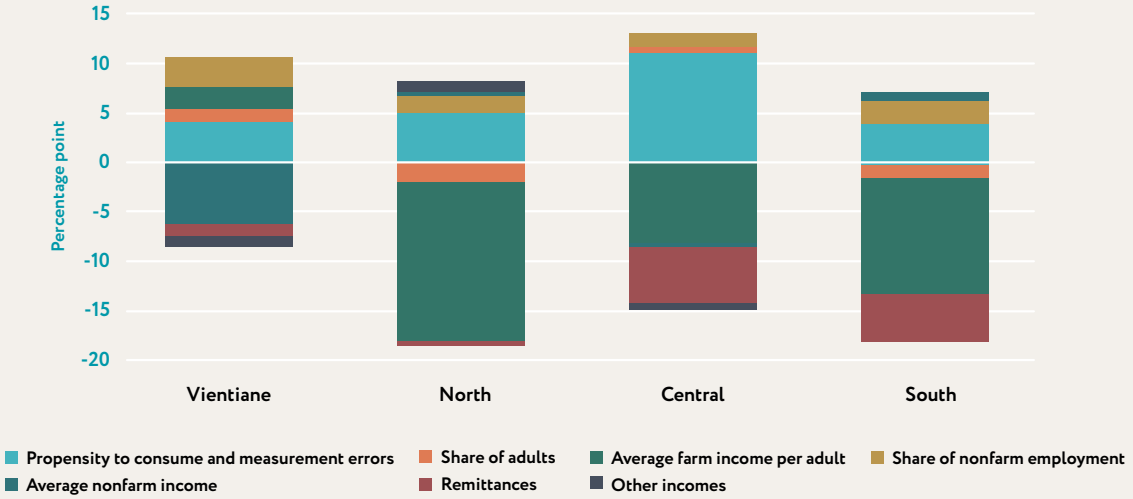
Changes in income components, 2012/13–2018/19

	LAO PDR		RURAL		URBAN	
	2012/13	2018/19	2012/13	2018/19	2012/13	2018/19
Share of adults	0.68	0.70	0.66	0.68	0.75	0.75
Average farm income per adult (monthly)	328,258	426,529	411,473	547,744	141,468	225,486
Share of adults employed in the nonfarm sector	0.31	0.28	0.21	0.18	0.58	0.50
Average nonfarm income per employed adult (monthly)	1,565,994	2,624,578	910,977	1,700,200	3,285,686	4,764,330
Remittances per capita	52,554	314,136	55,034	289,354	54,778	302,988
Other income per capita	21,129	238,120	13,748	175,695	39,352	364,394

Note: Income and remittances are shown in constant 2019 kip.

FIGURE 6.8.

Percentage contribution of income sources to poverty change by region, 2012/13–2018/19



Source: Shapley decomposition of changes in income poverty rate as proposed by Azevedo et al. (2013).

Note: For comparability of income estimates between the two surveys, agricultural income is constructed from sales of crops, fish, and forest products and net sales of livestock and poultry; business income is constructed from average monthly sales. Changes in the propensity to consume explain the difference trends in income and consumption poverty reduction, if not measurement errors.

FIGURE 6.9.

Percentage contribution of income sources to poverty change by ethnicity, 2012/13–2018/19

Source: Shapley decomposition of changes in income poverty rate as proposed by Azevedo et al. (2013).

Note: For comparability of income estimates between the two surveys, agricultural income is constructed from sales of crops, fish, and forest products and net sales of livestock and poultry; business income is constructed from average monthly sales. Changes in the propensity to consume explain the difference trends in income and consumption poverty reduction, if not measurement errors.

SPATIAL AND ETHNIC LENSES OF DRIVERS OF POVERTY REDUCTION

The key driver of poverty reduction in northern and southern Lao PDR was an increase in farm income. The past six years saw a substantial decline in poverty in these two regions while poverty reduction stagnated in the central region. The decomposition analysis shows that an improvement in farm income played a crucial role in driving poverty reduction in the northern and southern regions. Farm income accounted for 15.9 and 11.5 percentage points of the decline in poverty in the northern and the southern region, respectively (Figure 6.8, see Chapter 7). It had a smaller role in the central region, although the region has a larger fraction of households (88 percent) whose livelihood depends on agriculture than in the south (84 percent).

A lack of job opportunities slowed down poverty reduction in southern Lao PDR but was partially offset by an increase in remittances as workers sought opportunities elsewhere. The lack of opportunities in the local labor markets of central and southern Lao PDR could have resulted in a decline in household income and pushed people to migrate (see Chapters 8 and 9). Income losses from the local off-farm labor market was then compensated by money sent home by migrants. Between 2012/13 and 2018/19, the share of households receiving remittances increased from 13 percent to 21 percent in the southern region. Remittances accounted for 5.8 and 4.8 percentage points of the decline in poverty in the central and the southern region, respectively.

An increase in farm income contributed to a decline in poverty among Chine-Tibet households, who were heavily dependent on agriculture. During previous years, Chine-Tibet households have become more specialized in agriculture. In 2018/19, three-quarters of households earned their livelihood solely from agriculture, compared to 65 percent of Mon-Khmer and Hmong-Iumien households and 30 percent of Lao-Tai households. A significant improvement in farm income drove poverty reduction among this ethnic group despite being dragged down by a lack of nonfarm employment. For Mon-Khmer households, the impact of farm income on poverty reduction was moderate but was reinforced by a lower dependency ratio.

Nonlabor income compensated for small gains in farm income among Lao-Tai households but not among Hmong-Iumien households. Although the impact of nonfarm labor market slack was felt by Lao-Tai households, and the average gain from agriculture was small, they received income from other nonlabor sources. Remittances accounted for 5.1 percentage points of the reduction in poverty among the Lao-Tai. Nonlabor income, however, dragged down progress in poverty reduction by 5.8 percentage points among Hmong-Iumien households, who already experienced relatively low returns from agriculture compared to other ethnic minority groups (Figure 6.9).

SUMMARY

The growth pattern during 2012/13–2018/19 is characterized by limited private job opportunities, rising unemployment, and a gradual transition out of agriculture, which have led to:

- Households becoming less diversified in their livelihoods as a decline in nonfarm employment limited their ability to maintain livelihood diversification strategies.
- An improvement in farm income being a key driver of rural poverty reduction.
- An increasing role of migration and remittances in poverty reduction as workers sought job opportunities outside the local labor market.

Drivers of poverty reduction vary by region and ethnic group. These variations contribute to different patterns and outcomes of poverty reduction across regions and ethnic groups and will be discussed further in the subsequent chapters. Farm income stagnated in the central region but significantly improved in the other two regions (Chapter 7). Nonfarm jobs were shed in central and southern Lao PDR but were created in the northern region (Chapter 8). Migration and remittances grew but were more common in the central and southern regions (Chapter 9).

7 FARM PRODUCTIVITY: FROM SUBSISTENCE TO COMMERCIAL AGRICULTURE

Since nonfarm opportunities are limited and farm households adopt a less-diversified livelihood strategy, improving agricultural incomes provides a critical pathway to escape poverty. Chapter 6 shows that the economic transformation in previous years was associated with limited nonfarm job opportunities, rising unemployment, and a gradual transition out of agriculture. Significant poverty reduction between 2012/13 and 2018/19, was thus driven by an improvement in agricultural income, outweighing the negative impact of declining employment in the off-farm labor market. Agriculture remains a major source of income for more than half of households, with more than 80 percent deriving their income from agriculture. Agriculture dominates among rural and poor households. Thus, tapping agricultural potential is crucial to poverty reduction and welfare improvement for a broader set of populations.

This chapter examines the evolution of farm income as the main driver of poverty reduction and its variations across regions and ethnic groups. The role of farm income in poverty reduction varies by region and ethnic group. Farm income largely accounts for the decline in poverty in the northern and the southern region but has a smaller role in the central region. An increase in farm income also contributes significantly to a decline in poverty among Chine-Tibet households, who have become more specialized in agriculture. This chapter describes the factors that account for an increase (or a stagnation) in farm income and productivity, such as the pattern of land utilization, a transition from subsidence to commercial agriculture, farming practices, market access, and farmer attributes.

FARMING SYSTEMS

Agricultural production in Lao People's Democratic Republic (PDR) remains largely rice-based. Rice takes up 70 percent of the cultivated land. Rice farmers, especially the poor, mainly produce rice for their own consumption. About 70 percent of agricultural households and 85 percent of poor agricultural households grew rice in 2019, but only 5 percent of households produced it for commercial use (Table 7.1). Animal farming and hunting were more commercialized than crop production. More than one-third of households engaged in livestock and poultry production, fishing, aquaculture, or hunting traded their animal products.

Production of other crops is mainly for commercial purposes, but crop choices vary between the poor and the nonpoor. Nearly 30 percent of agricultural households grow non-rice crops, and almost all of them engage in commercial agriculture. Among commercial farm households, the poor are more likely than the nonpoor to grow staples (maize and tubers), while the nonpoor are more likely to grow spices and industrialized crops. The main tuber crop is cassava and the most common spice is cardamom. Industrialized crops include rubber, sugarcane, and palm. In 2018/19, about 25 percent of poor agricultural households grew crops for sale. More than one-third of such households produced maize, while less than 10 percent produced spices and industrialized crops. In nonpoor farming households, 27.7 percent engaged in commercial crop production, and more than one-third of them produced and traded spices and industrialized crops (Table 7.1).

Non-rice production has progressively become commercialized, contributing to an improvement in farm income that drove poverty reduction during 2012/13–2018/19. In 2012/13, only coffee, tea, and industrialized crops were grown particularly for commercial use. Less than half of households that cultivated tubers, vegetables, fruits, and spices engaged in commercial production. The commercialization rate significantly increased in 2018/19, especially for tubers and spices. More than 80 percent of households that cultivated crops other than vegetables, fruits, and rice traded their products. The share of farming households engaged in the commercial production of tubers and spices increased from 50 to 90 percent and from 35 to 81 percent, respectively. Hepp et al. (2019) argue that the rapid transition from rice-based subsistence shifting

TABLE 7.1.
Percentage of agricultural households by type of activity, 2018/19

AGRICULTURAL ACTIVITY	POOR			NONPOOR		
	Subsistence	Commercial	Total	Subsistence	Commercial	Total
Crops	63.1	24.6	87.7	46.7	27.7	74.4
Rice	80.8	3.9	84.7	63.9	3.7	67.5
Non-rice	4.9	21.2	26.1	3.2	25.1	28.3
Maize	1.6	9.1	10.8	1.2	5.9	7.1
Tubers	1.0	5.7	6.7	0.5	5.4	5.9
Vegetables, fruits	2.8	2.4	5.2	2.7	5.4	8.2
Spices and herbs	0.8	1.7	2.5	1.0	4.6	5.5
Coffee and tea	0.0	2.2	2.2	0.1	3.0	3.1
Industrialized crops	0.0	2.1	2.1	0.1	5.3	5.4
Animal farming and hunting	59.1	35.2	94.3	55.6	37.3	92.9

Source: Authors' calculation based on LECS 6.

cultivation toward commercialized market-oriented systems in Lao PDR is driven by infrastructure development and accessibility, especially in the northern region. Rice, however, remains a subsistence crop (Table 7.2).

A transition from subsistence to commercial agriculture has resulted in agricultural households becoming more specialized along commodity lines. In 2018/19, about 95 percent of farming households cultivated only one or two crops, compared to 80 percent in 2012/13 (Figure 7.1). The share of households producing each crop decreased across the board except for tubers, of which the production increased. In general, the poor are slightly less diversified than the nonpoor, but they tend to produce only rice.

Production of maize and tubers has become more concentrated among poor agricultural households. Poor farming households devoted 76 percent of their land to rice production (Figure 7.2). More than 70 percent of their agricultural land that was not used for rice production for cultivating maize and tubers. Between 2012/13 and 2018/19, the share of land used for maize production among poor farming households increased, while it declined among the nonpoor. The same period saw a higher utilization of agricultural land for growing tubers both among the poor and the nonpoor. The share of land used for cultivating other non-rice crops declined among poor farming households.

Nonpoor farming households have a more diversified crop portfolio and have allocated more land for growing tubers, spices, and industrialized crops. Although the share of land devoted to coffee and tea production declined, it fell further among poor farming households. As a result, the participation of the nonpoor in the production of spices, coffee, tea, and industrialized crops grew between 2012/13 and 2018/19. This increase was reflected in the relatively higher utilization of agricultural land for these crop lines among the nonpoor, compared to the poor. In 2018/19, the nonpoor utilized 42 percent of their cultivated land for growing spices, coffee, tea, and industrialized crops, unchanged from 2012/13. Among the poor, on the other hand, the share of cultivated land devoted to these crops declined from 36 percent to 19 percent.

TABLE 7.2.

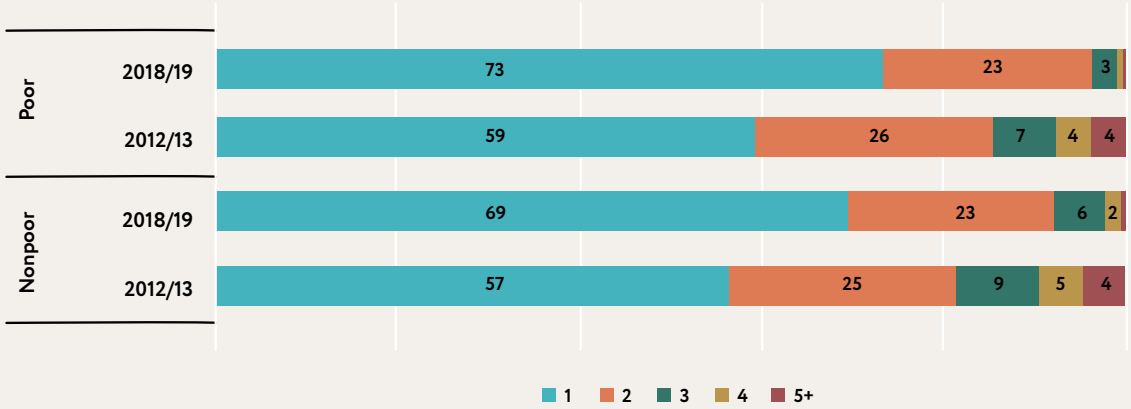
Percentage of agricultural households by type of activity, 2012/13–2018/19

AGRICULTURAL ACTIVITY	2012/13		2018/19	
	Share producing	% of which commercialized	Share producing	% of which commercialized
Crops	85.9	38.3	76.5	35.6
Rice	80.7	4.5	70.3	5.3
Non-rice	40.7	75.0	27.9	87.7
Maize	14.8	68.7	7.7	83.2
Tubers	5.2	50.1	6.0	90.2
Vegetables, fruits	16.8	46.1	7.7	64.4
Spices and herbs	9.4	35.1	5.0	81.3
Coffee and tea	4.5	95.9	3.0	97.2
Industrialized crops	9.5	87.8	4.9	97.7
Animal farming and hunting	98.9	46.8	93.1	39.7

Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 7.1.

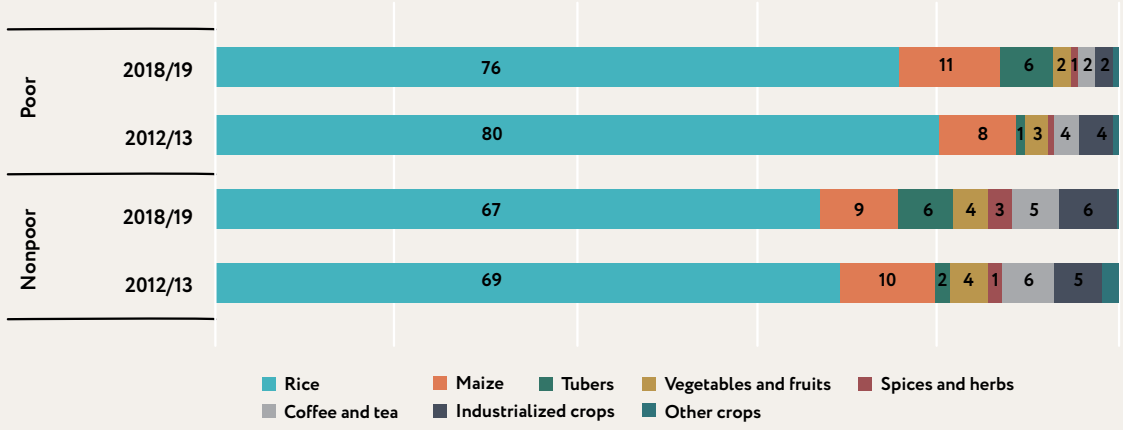
Crop diversification, percentage of households by the number of crops cultivated



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 7.2.

Percentage of land cultivated by crop type



Source: Authors' calculation based on LECS 5 and LECS 6.

FARM PRODUCTIVITY AND POVERTY REDUCTION

Farm productivity is lower among the bottom 40 percent households and among subsistence farmers.[11] In 2018/19, farm productivity of households at the bottom 40 percent of the consumption distribution was on average 12 percent lower than that of the top 60 percent. The gap was smaller for commercial farmers at 10 percent. Across all crops, farmers who produced for sale generated more revenues per hectare than subsistence farmers, irrespective of whether they are poor or nonpoor.

Increased commercialization resulted in a farm productivity catch up for the bottom 40 percent. Between 2012/13 and 2018/19, productivity of commercial farm households from the bottom 40 percent grew by 19 percent, compared to 16 percent of the top 60 percent. As a result, the productivity gap between low-income and high-income commercial farm households narrowed from 13 percent to 10 percent. However, productivity of subsistence farm households hardly improved, widening the productivity gap between low-income and high-income subsistence farm households. With more than 70 percent of households remaining in subsistence agriculture, the gap of the overall agricultural productivity between the bottom 40 percent and the top 40 percent expanded from 8 percent in 2012/13 to 12 percent in 2018/19 (Table 7.3).

Markets have incentivized households to adjust their crop choices in response to changing demands and prices, resulting in a shift toward higher value crops. Increasing demand for cassava from Thailand and Vietnam and for cardamom from China, Republic of Korea, and Vietnam, has encouraged households to devote their land for cultivation of these commercial crops. However, the production of cardamom tends to be concentrated among higher income households (Figure 7.2 and Table 7.2).[12] The median farm-gate price for cassava was about ₭N 1,100 per kilo in 2018/19, increasing from ₭N 750 in 2012/13, while it increased from ₭N 13,000 to ₭N 45,000 per kilo for cardamom (Table 7.4). Production for both commodities for sale increased in this period. Among non-rice production, the share of land allocated for growing spices increased from 4 percent to 7 percent between 2012/13 and 2018/19. The shift toward tubers is more noticeable. In 2018/19, about 20 percent of the land allocated for non-rice crops was used for tuber cultivation, more than triple the 6 percent that was used in 2012/13. During the same period, the share of commercial farm households cultivating tubers grew from 8 percent to 20 percent.

Though not at the same level as other non-rice crops, increasing commercial production of vegetables and fruits and tea significantly improved productivity among low-income households. Low income households shifted their production away from cucumbers toward higher value-added fruits, including oranges and bananas. Income from growing tea also significantly increased, especially among low-income households so much so that very few tea farming households remained poor in 2018/19.

Farmers also adopted better production methods to maximize incomes for commercial crops. As demand for coffee grew, a shift from traditional methods to other practices, such as trimming, weeding, and fertilizing resulted in a sharp jump in yields.[13] The real productivity for coffee substantially rose—60 percent for low-income households and almost double for the top 60 percent—increasing incomes even with moderate increases in farm-gate prices. Maize yields rose less than other crops due to slowing Chinese demand, the severe drought in the northern region, and damage caused by infestations (FAO 2020). Rubber, whose prices plunged by 47 percent, also saw a decline in yields.

The central region was an exception to the positive transformation in agriculture witnessed in other regions. Low-income farming households from the central region performed worse than their counterparts in the northern and southern regions in terms of farm productivity growth. While the average productivity of commercial agriculture for the bottom 40 percent grew by 14 percent in the northern region and 12 percent in the southern region, it stagnated in the central region (Table 7.5). This compounded the effects of declines in nonfarm job opportunities, which prevented households in the central region from deriving

11 Farm productivity is defined as the total revenue per hectare. Farm yield is defined as the total output in kilograms per hectare.

12 Cardamom is the second largest agricultural export from Lao PDR. Every year, 400 to 500 tons of dried seeds are exported to China, where it is used as an ingredient in Chinese medicine (Choulatida et al. 2017). The increasing demand for animal feed, starch products, and biofuel led to an expansion in cassava production. The cultivation area rose from 10,000 hectares in 2019 to more than 100,000 hectares in 2019.

13 Yields as high as 2,300 to 3,400 kilograms per hectare can be grown, compared to 500 to 1,000 kilograms per hectare by traditional methods (Coste 2018).

TABLE 7.3.

Average farm productivity (thousand kip per hectare)

CROP	2018/19				REAL GROWTH (PERCENT), 2012/13–2018/19				
	All production		Commerical production		All production			Commerical production	
	Bottom 40	Top 60	Bottom 40	Top 60	Total	Bottom 40	Top 60	Bottom 40	Top 60
Rice	5,822	6,682	7,533	8,633	6	4	8	10	0
Maize	5,878	6,373	6,394	6,813	5	9	3	7	0
Tubers	7,758	7,473	9,420	9,727	27	42	20	13	16
Vegetables/ fruits	6,833	7,053	11,166	10,832	11	15	8	52	26
Spices/ herbs	6,546	7,321	7,212	8,256	43	17	56	27	80
Coffee	6,982	7,495	6,982	7,495	89	72	103	64	98
Tea	2,476	2,822	2,476	2,710	54	73	62	165	59
Industrialized crops	4,978	6,043	5,021	6,338	–5	–14	–4	–20	–7
Average	**5,819**	**6,610**	**7,382**	**8,170**	**9**	**7**	**11**	**19**	**16**

Source: Authors' calculation based on LECS 5 and LECS 6.

Note: Farm productivity is estimated using output per harvested land and the median farm-gate price by province.

TABLE 7.4.

Average crop yields and median farm-gate prices of selected crops

CROP	YIELD (kg/ha)				FARM-GATE PRICE (kip/kg)		
	All		Commerical		Commerical		
	2012/13	2012/19	2012/13	2012/19	2012/13	2018/19	Real growth (%)
Rice	2,538	2,364	3,355	2,979	2,000	2,500	15
Maize	4,049	4,589	4,567	4,712	1,450	1,400	–14
Cassava	5,332	7,566	7,806	9,600	750	1,100	36
Cardamom	187	174	152	171	13,000	45,000	236
Coffee	575	1,571	580	1,531	6,402	7,052	0
Tea	539	332	466	325	3,000	8,000	156
Rubber	1,345	1,173	1,449	1,177	9,500	5,000	–58

Source: Authors' calculation based on LECS 5 and LECS 6.

Note: Yield is estimated using output per harvested land. The price of coffee is the average price of both red cherries and parchment. The 2018 median farm-gate prices for red cherries and parchment were 2,500 kip per kilo and 12,800 kip per kilo, respectively. Ha = hectare.

income from other sources. The lack of improvement in farm productivity meant the chances of escaping poverty for poor farming households were slim.

Low productivity growth among low-income households in central Lao PDR resulted from the high prevalence of subsistence agriculture and underperforming crops. Commercial farming is less common in the central region than in the other two regions, due, in part, to the importance of rice farming which is mostly grown for consumption. In 2018/19, rice accounted for 80 percent of cultivated land in the central region, compared to 67 percent in the southern region and 55 percent in the northern region (Figure 7.3). As a result, only 21 percent of farming households in central Lao PDR engaged in commercial agriculture and even fewer among poor farming households. Subsistence agriculture resulted in substantially lower productivity growth, especially when rice underperformed in the central region. Moreover, cash crops cultivated in the region, except for tubers, had relatively low productivity growth (Figure 7.3, Table 7.5). Maize and rubber yields have underperformed in recent years, and despite growing demand for cassava, low-income farmers in the central region have struggled to keep pace in productivity improvement with their peers in the southern region.

Rapid growth in farm productivity was observed among Chine-Tibet farmers. They are more market-oriented and more diversified, with rice accounting for only 40 percent of land utilization compared to 60 percent among Mon-Khmer and Hmong-Iumien farmers and 73 percent among Lao-Tai farmers (Figure 7.5). Many Chine-Tibet farmers allocated more land to grow rubber after the price peaked in 2011. Despite suffering from a decline in global rubber demand since 2012, two mitigating factors cushioned them. First, the rubber expansion replaced rice land. Since rubber prices in 2018/19 were double rice prices even after the price drop, there were minimal losses in revenues per hectare from the switch from rice to rubber. Second, massive growth in the cardamom market has made up for any losses, with land devoted to spices and herbs doubling among the Chine-Tibet. In 2018/19, 38 percent of Chine-Tibet farm households cultivated cardamom, rising from 20 percent in 2012/13. Overall farm productivity increased by 29 and 65 percent among the Chine-Tibet in the bottom 40 percent and top 60 percent, respectively, which was higher than any other ethnic group (Figure 7.4).

TABLE 7.5.

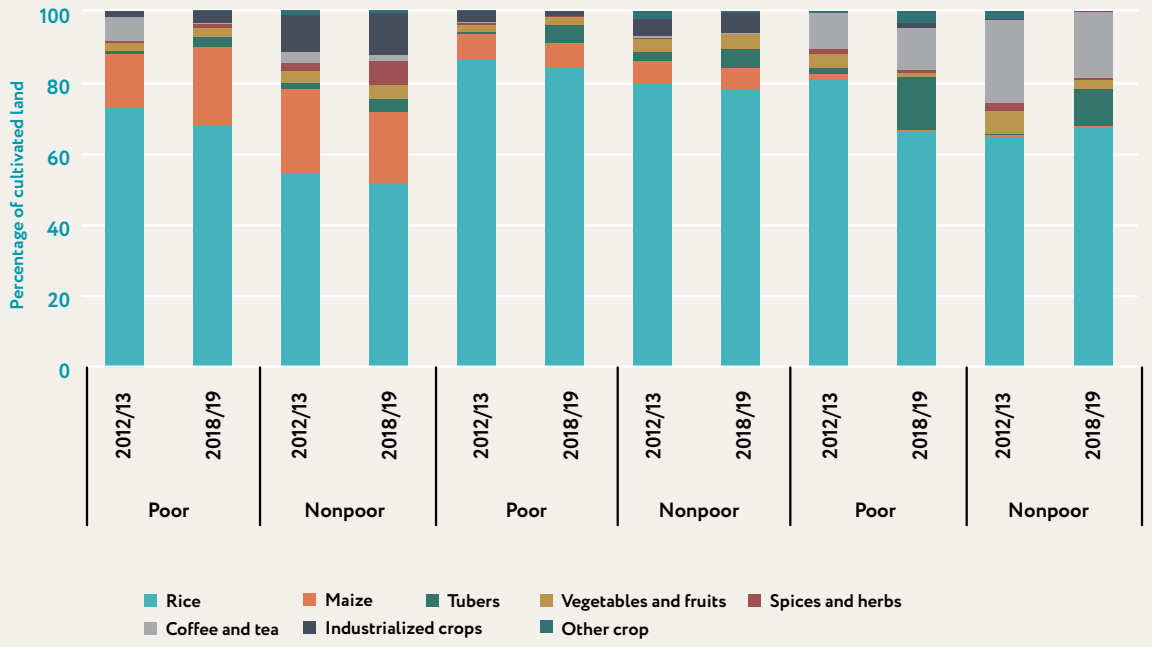
Farm productivity growth (in real terms, percent) among the poor and the bottom 40 percent by region, 2012/13–2018/19

CROP	POOR			BOTTOM 40 PERCENT			TOP 60 PERCENT		
	North	Central	South	North	Central	South	North	Central	South
Rice	15	–5	0	12	–2	1	10	8	12
Maize	16	–1		11	–7		–1	12	
Tubers		37	47		24	49		5	23
Vegetables, fruits	17	–1		31	–7		–7	10	
Spices, herbs				43			79		
Coffee			78			75			104
Tea				73			62		
Industrialized crops	3			1	–28		–4	8	
Average	16	–4	13	14	–1	12	10	9	21

Source: Authors' calculation based on LECS 5 and LECS 6.

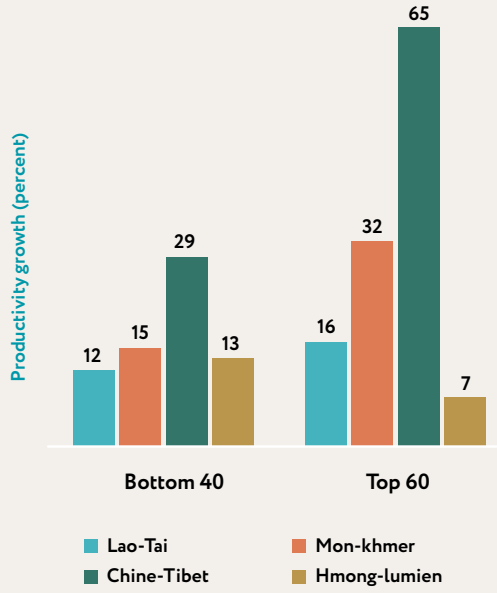
Note: Some cells are empty due to small sample size.

FIGURE 7.3.
Share of land cultivated by crop type by region



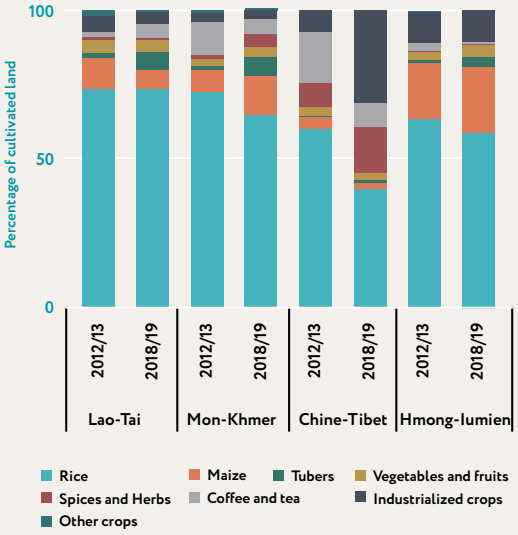
Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 7.4.
Farm productivity growth by ethnic group, 2013–2018



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 7.5.
Share of land cultivated by crop type by ethnic group



Source: Authors' calculation based on LECS 5 and LECS 6.

DETERMINANTS OF LAND UTILIZATION AND FARM PRODUCTIVITY

Farm incomes are driven by crop choices and productivity which are influenced by several factors, such as farm and farmer characteristics. The crop choices farmers made, and thus agricultural land-use patterns, depend on the demand for crops as well as farm location and farmer characteristics. While productivity varies by crop type, it is also influenced by other factors such as farming practices—ranging from production inputs and yield shifters like irrigation—and farmer characteristics, like farmer management skills. This section employs a regression analysis to distinguish the impact of each factor on crop choices and productivity.[14]

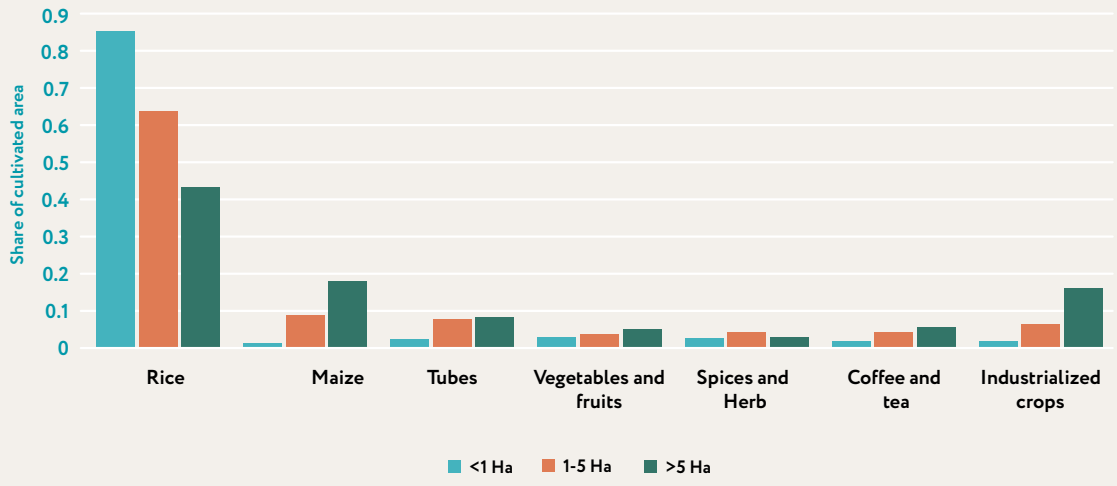
FARMLAND AND FARMING PRACTICES

The size of landholding increases the probability that farmers will engage in commercial agriculture. Access to additional land allows farmers to diversify from rice and grow other cash crops. Farmers with a farm size of 1 to 5 hectares allocate 20 percent more land for non-rice crops than farmers who own less than 1 hectare of land (Figure 7.6). The share of land used for rice cultivation is lower by another 20 percent for farmers whose farmland is larger than 5 hectares. The impact of a farm size of more than 5 hectares on land-use patterns is especially noticeable for the cultivation of industrialized crops that require large-scale farming. The share of land allocated for growing industrial crops and maize more than doubled among farmers whose farms are larger than 5 hectares.

Larger plots improve productivity gains from commercial agriculture. Commercial agriculture exhibits higher productivity, and large-scale production shows higher productivity gains. For plots smaller than 1 hectare, shifting from subsistence to commercial agriculture does not result in significant productivity improvement. Productivity gains from commercial agriculture are 43 percent higher when plots are larger than 1 hectare and to 74 percent higher for plots larger than 5 hectares (Figure 7.7). The result suggests that access to land is equally as important as promoting commercial agriculture to improve farm productivity and the livelihoods of farmers.

Input usage influences farm productivity. Insecticides tend to improve farm productivity. An increase in insecticide-use intensity by 1 percent improves farm productivity by 2 percent (Figure 7.8). The impact of fertilizer is somewhat weaker, with a 1-percent increase in fertilizer-use intensity leading to a 1-percent improvement in farm productivity.

FIGURE 7.6.
Impact of plot size on agricultural land-use patterns



Source: Authors' calculation based on LECS 6.
Note: Ha = hectare.

14 See Table C6 and Table C7 for regression results.

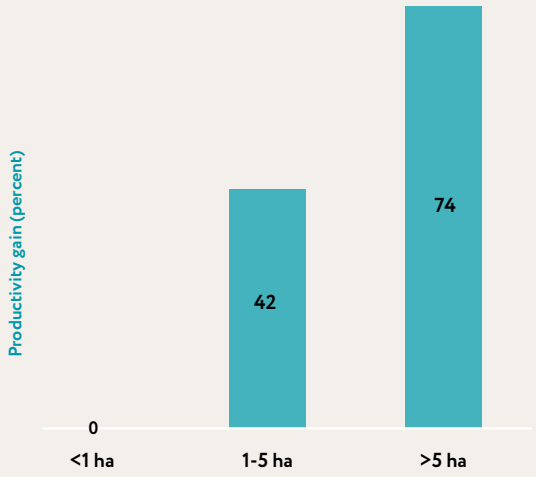
The agricultural system in Lao PDR is mostly rain fed. In 2018/19, agricultural households reported less than 7 percent of plots were irrigated. The expansion of the cultivation of commercial agriculture emphasizes the need for the expansion and more efficient use of irrigation.

MARKET ACCESS AND FARMER ATTRIBUTES

Famers with access to markets and credit tend to utilize their land for non-rice crops. Farmers with access to markets devote 12.5 percent less of the cultivated land to rice production, and farmers with access to both markets and credit devote 15 percent more of their land to non-rice crops. This is consistent with the price-wedge hypothesis that states that farmers are more inclined to grow food to meet subsistence needs when food markets are not integrated because the high costs of reaching markets has an asymmetrical impact, lowering the prices for their own marketed produce but raising the price of purchasing food. Market access influences farmers' decisions to produce most cash crops in Lao PDR, while access to credit is more critical for growing perennial crops, such as coffee and rubber, given the high initial investment required to grow these crops.

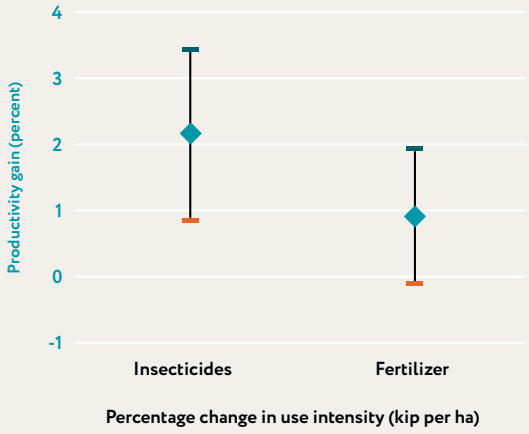
Access to markets and finance is critical for improving farm productivity. Farmers operating in a village that has access to markets or private traders achieve higher farm productivity than their counterparts. Access to markets alone can increase crop productivity by 27 percent (Figure 7.10). Agricultural households who lack credit access have 33 percent lower productivity. Credit access has become more critical as commercial agriculture has become more common. Hepp et al. (2019) studied two villages in northern Lao PDR. They found that capital and credit access are deemed the most important resources required for cultivation in a village where agriculture is more market-oriented, while in villages that are not market-oriented, food security and land availability are ranked first. Inadequate access to markets and finance particularly for small-scale, subsistence farmers is one of the challenges to transforming the agricultural sector from one that is predominantly based on subsistence to one of commercial farming.

FIGURE 7.7.
Productivity gain from commercial agriculture by plot size



Source: Authors' calculation based on LECS 6.
Note: Ha = hectare.

FIGURE 7.8.
Predicted productivity improvement by farming practice



Source: Authors' calculation based on LECS 6
Note: The chart shows a 95 percent confidence interval. Ha = hectare.

FIGURE 7.9.

Predicted change in land-use patterns with access to market and credit

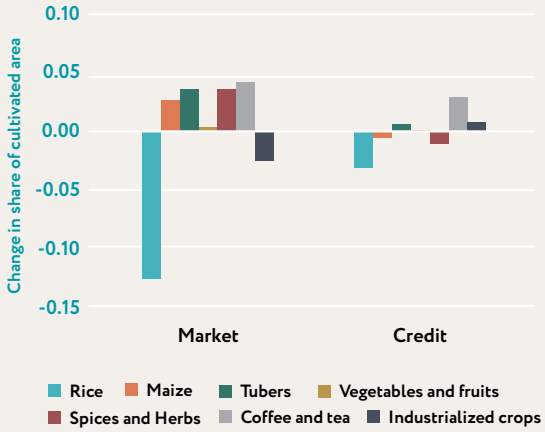


FIGURE 7.10.

Predicted farm productivity improvement with access to market and credit

Source: Authors' calculation based on LECS 6.

Note: Education refers to the highest education level of farmers in a household.

FIGURE 7.11.

Predicted land-use patterns by education

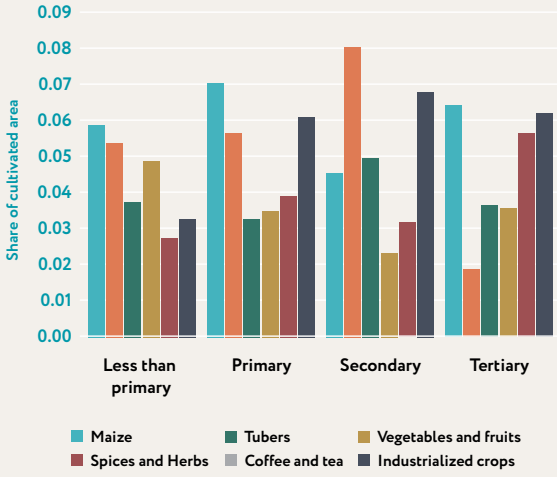
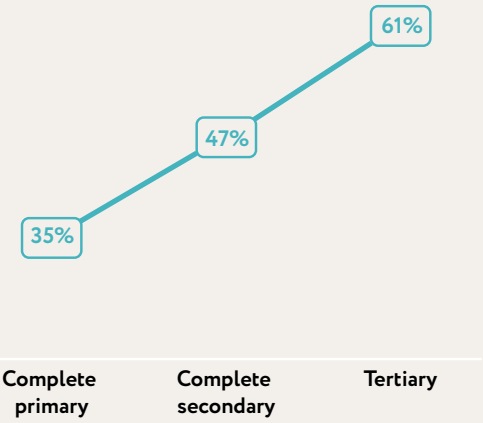


FIGURE 7.12.

Productivity premium relative to farmers with less than primary education



Source: Authors' calculation based on LECS 6.

Note: Education refers to the highest education level of farmers in a household.

Education levels influence non-rice crop production. Farmers from all levels of education allocate more than 70 percent of their land for rice cultivation. However, the allocation of land for growing non-rice crops varies by education level. Farmers with less than primary education tend to devote their land for growing maize, tubers, and spices (Figure 7.11). Farmers who have at least completed primary education choose industrialized crops (rubber and sugar cane) over spices. Crop portfolios of farmers with a secondary education contain a large proportion of tubers while tertiary-educated farmers devote their land to growing coffee rather than tubers.

Yields significantly increase with farmers' education, irrespective of crop type. Controlling for crop choices and other farmer characteristics, land productivity of farmers who have completed primary education is 35 percent higher than those with less than primary education (Figure 7.12). Higher education pays less of a premium but is still a significant improvement. Productivity increases by 12 and 26 percent for farmers who have completed secondary education and tertiary education, respectively.

There is no significant link between other demographic factors, such as age and gender, and agricultural land-use patterns or farm productivity. Female-headed households account for less than 10 percent of agricultural households. Besides, there are no significant gender differentials in farm productivity or land-use patterns. Young farmers are more likely to grow ordinary rice and other commercial crops than old farmers. However, once other characteristics are factored in, age appears to have no significant relationship with farm productivity or land-use patterns.

Chine-Tibet farmers generate higher yields on average than their counterparts once crop choices and farmer characteristics are factored in. Longer crop cycles, soil fertility, and climatic factors could contribute to higher yields among the Chine-Tibet, as they have traditionally inhabited the uplands of the northern part of Lao PDR (Schiller et al. 2006). The analysis of land-use patterns shows that Chine-Tibet farmers are more likely to allocate more land for cultivating spices, tea, and industrialized crops than other ethnic group. Chine-Tibet farmers experienced the largest gain in farm productivity between 2012/13 and 2018/19 despite having a relatively low level of education. This suggest that the Chine-Tibet are better at maximizing their absolute advantage by growing crops that are most suitable for their ecological zones and that have increased their productivity, not only because yields will be higher, but because of the comparative advantage in higher value crops (for example, spices) too.

SUMMARY

The improvement in farm income, a key driver of poverty reduction in rural areas and in the northern and southern regions, was a result of a transition from subsistence to commercial agriculture. Markets generally incentivize households to adjust their crop types and farming practices in response to changing demands and prices, resulting in a shift toward higher value crops and an increase in farm productivity. The least productive change in land-use patterns was observed among low-income agricultural households in the central region and in Hmong-Iumien households—both experiencing the slowest pace of poverty reduction.

Going forward, promoting commercial agriculture and enhancing farm productivity will be crucial for poverty reduction and livelihood improvement. Key factors that influence agricultural households to engage in commercial farming include farmers' education, access to markets and finance, and the size of landholding.

The next chapter explores another key component of household income—nonfarm income—and off-farm labor market conditions. Unlike farm income, nonfarm income played a minimal role in reducing poverty between 2012/13 and 2018/19 (Chapter 6). In fact, limited nonfarm employment opportunities and rising unemployment created a significant drag on poverty reduction. Understanding the factors that decelerate poverty reduction is equally as important as understanding the drivers of poverty reduction.

8 NONFARM EMPLOYMENT: LESS BUT BETTER

Nonfarm employment reversed course during the past six years, shedding jobs and creating a significant drag on poverty reduction. Chapter 6 shows that labor force participation declined while unemployment rose. The resource-driven growth did not create enough jobs to absorb the surplus agricultural workforce. The manufacturing sector shed jobs, while job creation in the nongovernment services sector stagnated. Surplus rural workers thus found themselves confined to agriculture or without work when leaving agriculture to find jobs in nonfarm sectors. For many urban poor, opportunities in the nonfarm sector are the main route to escape poverty. Limited nonfarm job opportunities stalled urban poverty reduction in recent years, while the rate of urbanization accelerated. They also prevented farm households from diversifying livelihood sources.

Reversing the trend of jobless growth and ensuring that the poor are integrated into the growth process and get access to the job opportunities that are created will be critical to maintaining the poverty reduction momentum. Nonfarm employment will remain an important source of household livelihood as it enables households to diversify their income sources and reduce vulnerability to poverty. Understanding factors that decelerate poverty reduction is equally as important as understanding the drivers of poverty reduction. This chapter expands the discussion on off-farm labor market conditions in Chapter 6 by exploring trends in nonfarm employment and earnings, net job creation or losses by region, and determinants of household participation in the off-farm labor markets and their nonfarm earnings.

TRENDS IN NONFARM EMPLOYMENT AND EARNINGS

A stagnation in nonfarm job creation was associated with an accelerated gain in nonfarm earnings among remaining workers. Although opportunities have become less plentiful, individuals participating in the off-farm labor markets are highly rewarded. Between 2012/13 and 2018/19, about 20,000 net nonfarm jobs disappeared, resulting in a 1.7 percent contraction in nonfarm employment and contributing to rising unemployment. While entry to the nonfarm labor market was difficult, the average real wage increased by almost 60 percent (Figure 8.1, Figure 8.2), compared to the preceding five years when nearly 250,000 nonfarm jobs were created and the average real wage only increased by 34 percent.

EMPLOYMENT

All sectors except the public sector experienced a decline in wage employment between 2012/13 and 2018/19 (Figure 8.3). The wholesale and retail trade sector shed the most workers—about 76,000 in total, almost exclusively self-employed workers, followed by the manufacturing sector which shed 73,000 jobs, more than half of the wage jobs. Wood manufacturing accounted for 40,000 job losses. The construction sector lost wage jobs but gained non-wage jobs. Net job increases were only registered in the public sector and the hotel and catering sectors.

The aggregate net nonfarm job losses mask disparities across regions. Between 2012/13 and 2018/19, nonfarm jobs were created in certain geographical areas but lost in the others. A decline in nonfarm job opportunities was predominantly observed in rural areas, especially in the central and southern regions. Urban areas, however, experienced net job creation (Figure 8.4). About 40,000 jobs were shed in rural areas while nearly 20,000 jobs were created in urban areas, a 3-percent increase compared to 2012/13, as a result of the expanding public sector and self-employed jobs. Consequently, rural poverty reduction was mainly driven by farm income while nonfarm income contributed to urban poverty reduction during the last six years.

In the northern region, public infrastructure and foreign investment created spillovers in local labor markets, generating nearly 40,000 jobs in urban areas. Foreign investment in the northern region has boosted local economies and employment. The largest gain was seen in Bokeo, followed by Oudomxay, Huaphan, and Xayaboury (Figure 8.5). Out of 40,000 urban jobs created, half were wage jobs and the other half were self-employed jobs.

FIGURE 8.1.
Nonfarm employment

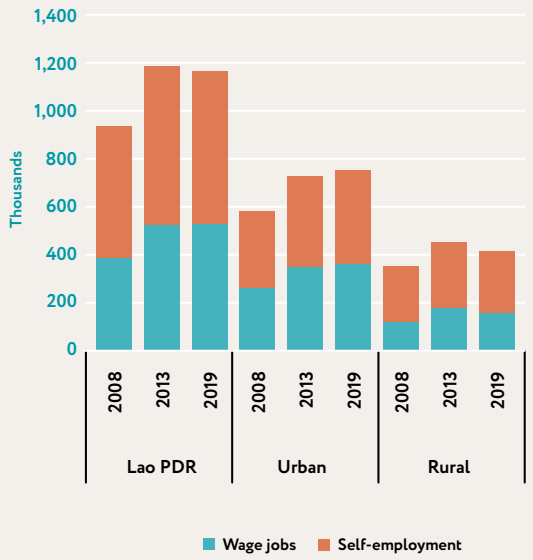
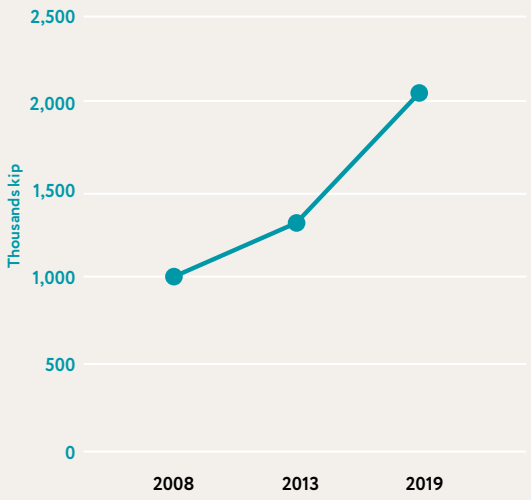


FIGURE 8.2.
Trends in real wage



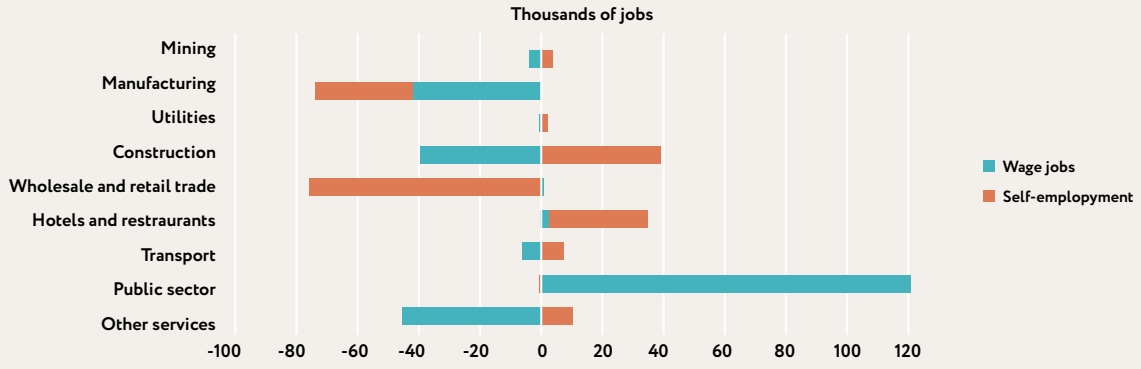
Source: Authors' calculation based on LECS 4, LECS 5 and LECS 6.

Wage jobs were created by the expanding public sector, particularly in positions related to organizations and trade unions. Self-employed jobs were created in the hospitality sector in which workers were employed in shops and restaurants.

Self-employment or micro and small enterprises (MSEs) continued to grow in the periphery of Vientiane capital, which did not experience a decline in manufacturing jobs. At the same time, public sector wage employment rose. Many self-employed jobs were generated in the construction and hospitality sectors, resulting in net job creation of 16,000 jobs. This was a 5-percent increase in nonfarm employment compared to 2012/13.

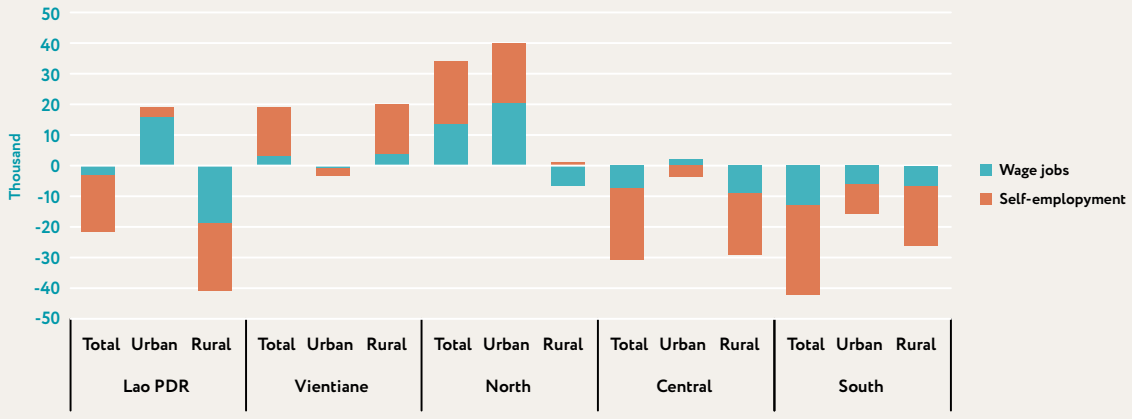
Both urban and rural jobs were lost in central and southern regions, driven by declining manufacturing and retail trade activities. The number of nonfarm jobs substantially declined in Khammuane and Bolikhamxay in the central region, followed by Champasack and Attapeu in the southern region (Figure 8.5). Although the public and hospitality sectors created jobs, there were not enough

FIGURE 8.3.
Absolute change in nonfarm jobs by sector, 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 8.4.
Net nonfarm job creation by region and urban/rural, 2013–19



Source: Authors' calculation based on LECS 5 and LECS 6.

to offset employment losses in other industries, notably wood manufacturing jobs. The central region experienced a substantial decline in manufacturing jobs, and the southern region saw additional losses in retail trade.

Despite a decline in nonfarm employment, jobs are still concentrated in the central region. Nonfarm employment accounts for 75 percent of jobs in Vientiane capital and more than 40 of jobs in Vientiane province and Champassak, the three provinces where nonfarm activity dominates. Nonfarm employment also accounted for more than 30 percent of employment in Xiengkhuang and Bolikhamxay (Figure 8.6). Of these provinces, only Vientiane capital saw a noticeable increase in nonfarm jobs during the past six years. Many nonfarm jobs were shed in Bolikhamxay and Champasack, though nonfarm work remains an important source of livelihood for households in these two provinces.

The COVID-19 outbreak has brought an unprecedented employment shock, putting pressure on the already-weak job market. A sharp drop in tourism demand has led to job losses in tourism-related sectors including retail trade, transport and hospitality businesses, which account for 11 percent of total employment and as much as 22 percent in urban areas. A fall in travel and tourism demand is expected to last for at least one quarter, leading to income loss or even permanent job losses if the crisis is prolonged. Construction and personal services have also been affected by a nationwide lockdown and social distancing but can be gradually resumed once the lockdown measure is lifted.

WAGE EARNINGS

Real wages increased in tandem with labor productivity. For those participating in the off-farm labor markets, real wages and labor productivity steadily increased during the last decade. Real wage growth was much more pronounced in the previous six years, mirroring an increase in labor productivity and output per worker (Figure 8.7). Between 2013 and 2018, labor productivity grew by an annual rate of 7.3 percent, while real wages grew 8.1 percent. The increase in average real wages between 2012/13 and 2018/19 reflected the magnitude of employment declines at the labor market's lower end.

Access to off-farm opportunities remained limited for poorly educated workers. Declining nonfarm employment opportunities made it difficult for low-skilled workers to participate in nonfarm activities. The share of low-skilled workers participating in nonfarm wage employment declined while that of high-skilled workers rose notably among people with secondary education (Figure 8.9). Self-employed jobs tend to be less skill-intensive than wage employment. The selection into nonfarm self-employment increased among workers who completed primary education or higher, but remained unchanged for those with less than primary education (Figure 8.10).

Low-paid workers exited off-farm labor markets. The government adopted the monthly minimum wage of 1.1 million kip in 2018, a 22 percent increase from 900,000 kip in 2015 and a 75 percent increase from 620,000 kip in 2011. In real terms, the minimum wage rose in tandem with the average wage for all wage workers.[15] In 2012/13, 15 percent of wage workers earned below the minimum wage (Figure 8.11). Manufacturing, public sector construction and other services jobs constituted a large share of this group (Figure 8.12). Low-skilled workers were more likely to be paid below the minimum wage (Figure 8.13). Jobs paying below the minimum wage almost disappeared in 2018/19. Except for the public sector, the sectors with a higher share of workers paid below the minimum wage in 2012/13 saw the largest net wage job losses in 2018/19. It is inconclusive whether better enforcement of the minimum wage law or external factors such as a ban on illegal logging and disappearing small services has triggered low-paid workers exiting off-farm labor markets.

The exception is the northern region where real wage growth accelerated with job creation. During 2013–2019, when about 14,000 wage jobs were created in the northern region, the average wage increased by 10 percent, accelerating from 5 percent during the preceding five years (Figure 8.8). The northern region benefited the most from sustained growth in recent years as reflected in a significant decline in poverty incidence. Other regions saw a decline in net wage jobs as average wages increased. As a result, many households have become more specialized in their livelihoods and relied on a few bread winners. At the same time, it was harder for low-skilled workers from agricultural households to find nonfarm employment to support livelihood diversification.

15 Between 2012/13 and 2018/19, the minimum wage grew at an annual rate of 8.1 percent while the average hourly wage and monthly wage grew at an annual rate of 9.7 and 8.1 percent, respectively.

FIGURE 8.5.
Net nonfarm job creation by province, 2013–19

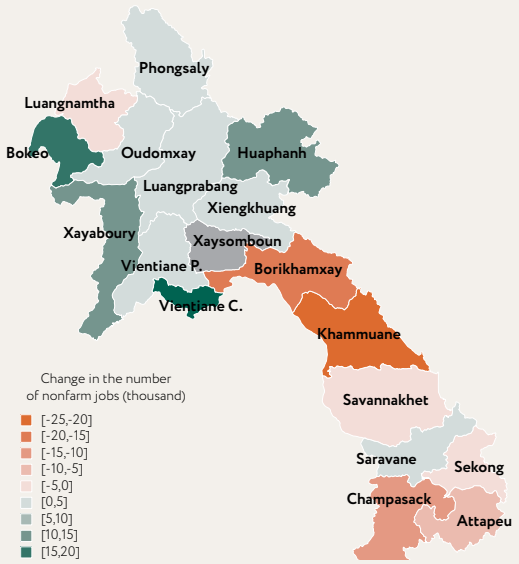
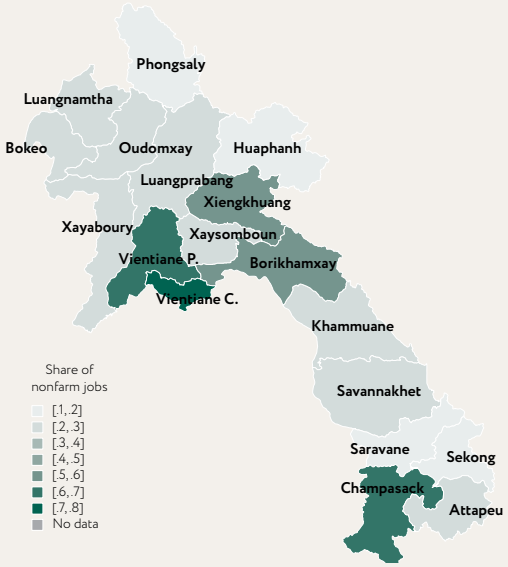


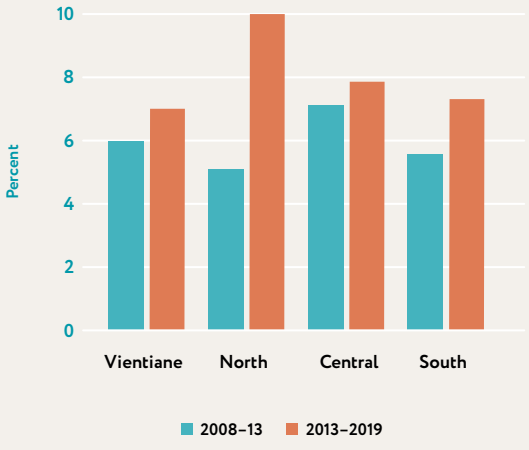
FIGURE 8.6.
Share of nonfarm jobs by province 2019



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 8.7.
Real wage growth and labor productivity

FIGURE 8.8.
Real wage growth by region



Source: Authors' calculation.

Note: Labor productivity is defined as annual sales per worker calculated using the World Bank enterprise surveys. Wage defined as monthly wage not adjusted for hours worked—both excluding 1 percent extreme values in each year. Output per worker is calculated using GDP and employment from household surveys, such as the Lao Expenditure and Consumption Survey). All indicators are temporally deflated and expressed in annualized growth.

FIGURE 8.9.

Share of nonfarm wage employment in the labor force by education level

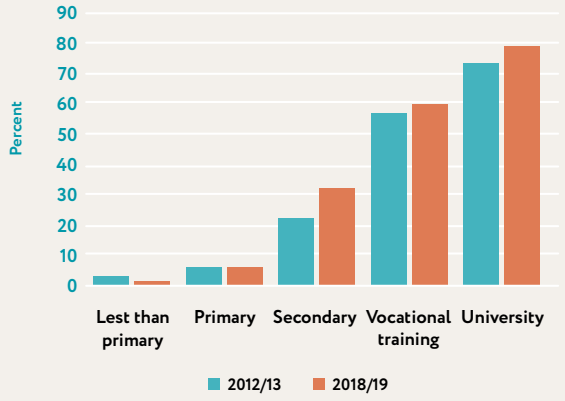
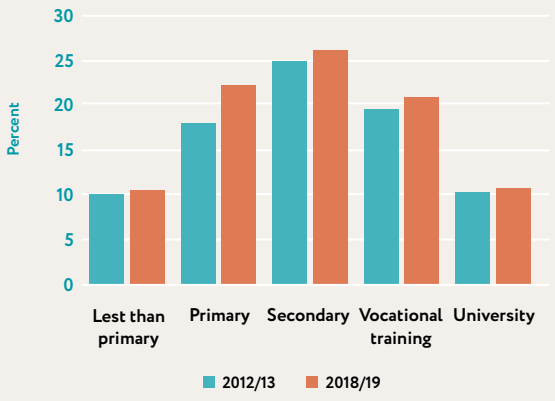


FIGURE 8.10.

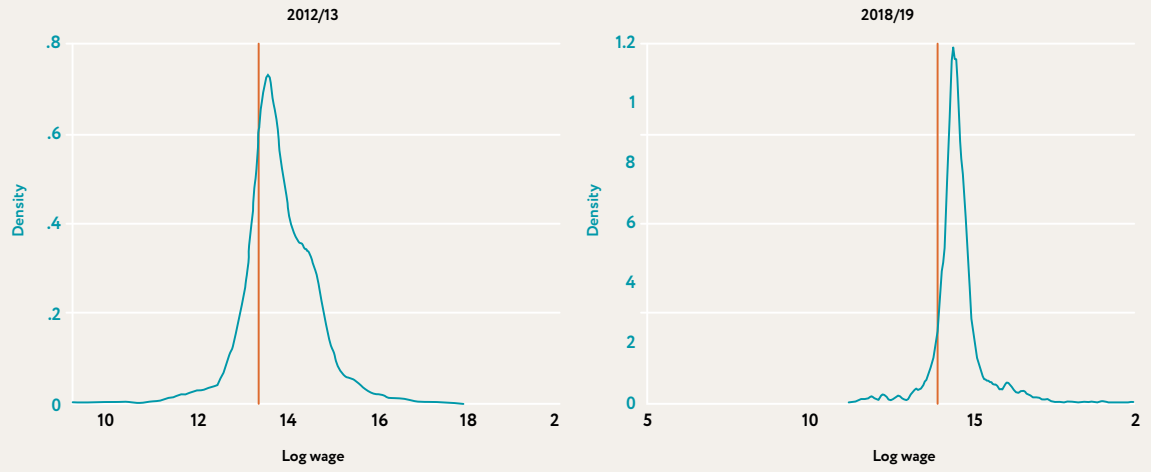
Share of nonfarm self-employment in the labor force by education level



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 8.11.

Equivalent monthly wage distribution and the minimum wage, 2012/13–2018/19



Sources: Government of Lao PDR; and authors' calculation based on LECS 5 and LECS 6.

Note: Nonfarm wage jobs. Equivalent monthly wages are calculated using hourly wages and regular working hours of 176 hours per month.

FIGURE 8.12.
Composition of nonfarm wage workers below the minimum wage, 2012/13 (percent)

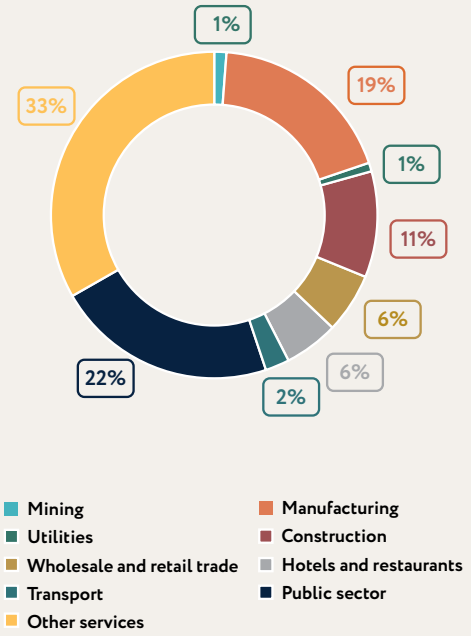
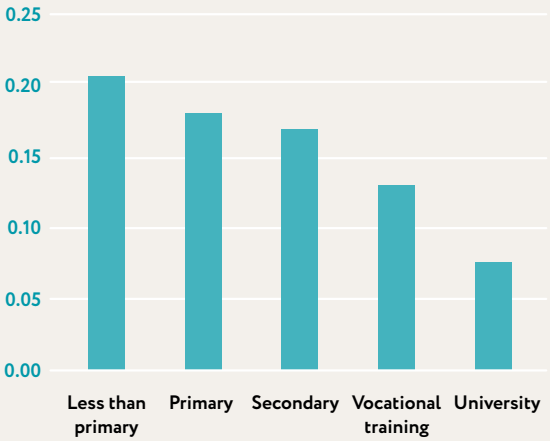


FIGURE 8.13.
Share of nonfarm wage workers below the minimum wage by education, 2012/13



Source: Authors' calculation based on LECS 5 and LECS 6.

DETERMINANTS OF NONFARM EMPLOYMENT PARTICIPATION

When off-farm labor market participation is more selective, individual characteristics play a critical role in determining who participates. This section employs the standard occupational choice model to explore which characteristics influence individuals' decisions to participate in nonfarm activities.[16]

Education is key for entry into the nonfarm labor market. Among individuals participating in the labor force, those with higher education have higher chances to engage in nonfarm employment. The chances of finding a nonfarm job increase from 5 percent with no formal education to 18 percent with primary education, and reach 55 percent with secondary education (Figure 8.14). Moreover, finishing primary and lower secondary school has become an important comparative advantage when looking for nonfarm jobs when opportunities are scarce. In 2018/19, the chances of finding a nonfarm job for individuals who completed lower secondary education was 32 percent higher than those with less than primary education, a significant increase from 21 percent in 2012/13. The rising gap is consistent with the fact that many low-paid, low-skilled jobs were shed during the past few years.

Females had more chances to find a nonfarm job in 2012/13, but not anymore after the labor market conditions worsened. In 2012/13, females were 76 percent more likely to be employed in the off-farm labor market than males with similar age and education qualifications residing in the same location. That advantage has been eroded. In the new context, males have a 23 percent higher chance of finding jobs outside the agricultural sector (Figure 8.15). Only 20 percent of females participating in the labor force were employed in the nonfarm sector in 2018/19, compared to 37 percent in 2012/13.

Stagnation in nonfarm employment has taken its toll on youth. Young workers are facing a tougher off-farm labor market than they were six years ago. Among individuals participating in the labor force, the chances of being

16 See Table C1 for regression results.

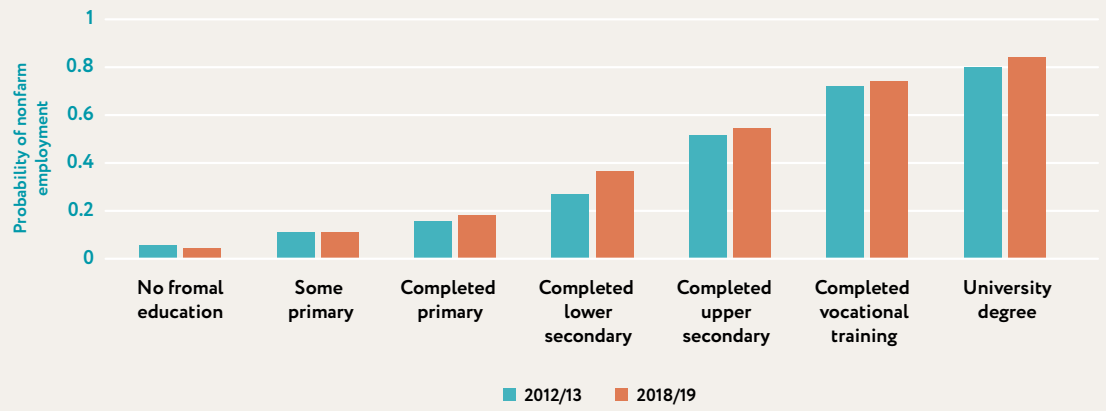
employed in the off-farm labor market are generally lower among youth (Figure 8.16). This is because young workers tend to have the highest rate of unemployment due to their lack of experience. They also entered the labor force as labor market conditions worsened. Not only low-educated youth were affected (Figure 8.17). The well-educated young labor force suffered the most from rising unemployment. The unemployment rate among youth who completed upper secondary education or higher is almost three times that of their adult counterparts. There are two possible explanations. On the one hand, well-educated young workers are mainly active in off-farm labor markets, while low-educated youth are more likely to have an option to return to farming activities. On the other hand, unemployment in Lao PDR shows a degree of voluntary unemployment in which high-skilled workers choose voluntary unemployment while queuing for a quality job in the formal sector. Voluntary unemployment has become significantly more pronounced among youth who completed upper secondary education or higher.

Even if they are employed, chances of youth engaging in the off-farm labor market have substantially deteriorated. In 2012/13, employed young people had a greater chance to participate in the off-farm labor market than any other age group. In 2018/19, their odds were lower than those age 25 to 55 years. Youth with primary education were 10 to 20 percent less likely to find a nonfarm job than adults with the same level of education, and many of them were forced to remain in agriculture (Figure 8.18). For individuals with secondary education or higher, the nonfarm job prospects were 20 percent lower than other age groups, and they were left unemployed. The result was an increase in unemployment in 2018/19 that was more pervasive among young individuals.

The Chine-Tibet, who reside in the northern region, fared better than other ethnic groups. Generally, ethnic minorities have significantly lower chances of finding a nonfarm job than the Lao-Tai, and it used to be lowest for the Chine-Tibet in 2012/13. However, most nonfarm jobs created in the northern region during the past few years have likely employed the Chine-Tibet. As a result, their job prospects have substantially improved, with the odds of participating in the off-farm labor market almost double to 10 percent in 2018/19, in line with other ethnic minority groups.

Higher education closes the opportunity gap between the Lao-Tai and the Chine-Tibet. The returns on education are high for the Chine-Tibet. With less than lower secondary education, they have a 20 percent chance of finding a nonfarm job, which is similar to job prospects of other ethnic minorities with that level of education. With upper secondary education, their chance increases to 60 percent, which is close to the Lao-Tai and is 15 percent higher than the Mon-Khmer and the Hmong-Iumien with similar qualifications. For the latter two groups, the opportunity gaps remain even with upper secondary education (Figure 8.19).

FIGURE 8.14.
Probability of nonfarm employment by education



Source: Authors' calculation based on LECS 5 and LECS 6.
Note: Predicted probability conditional on labor force participation.

FIGURE 8.15.
Probability of nonfarm employment by gender

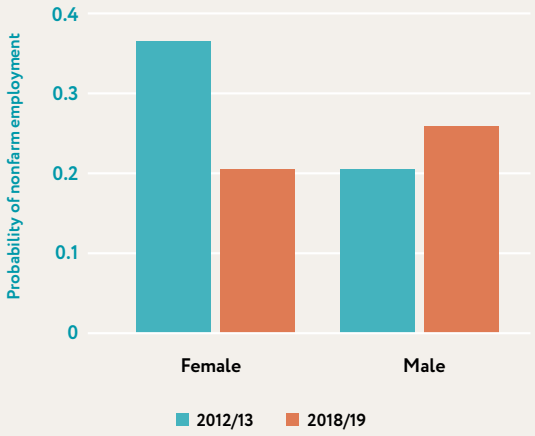
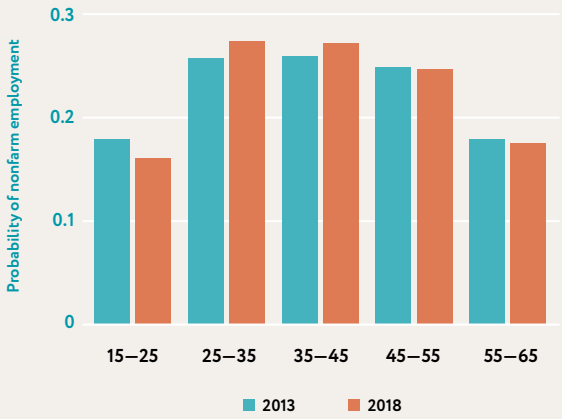
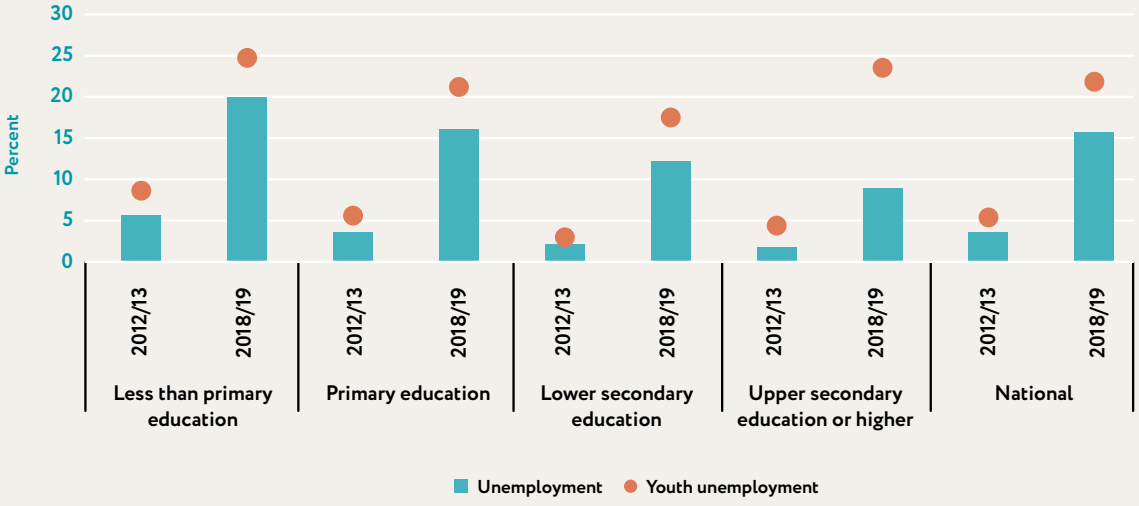


FIGURE 8.16.
Probability of nonfarm employment by age



Source: Authors' calculation based on LECS 5 and LECS 6.
Note: Predicted probability conditional on labor force participation.

FIGURE 8.17.
Youth unemployment, 2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

FIGURE 8.18.
Probability of nonfarm employment by education and age group, 2018/19

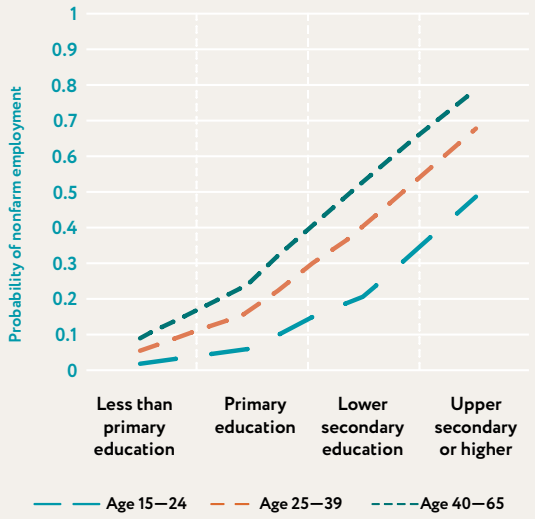
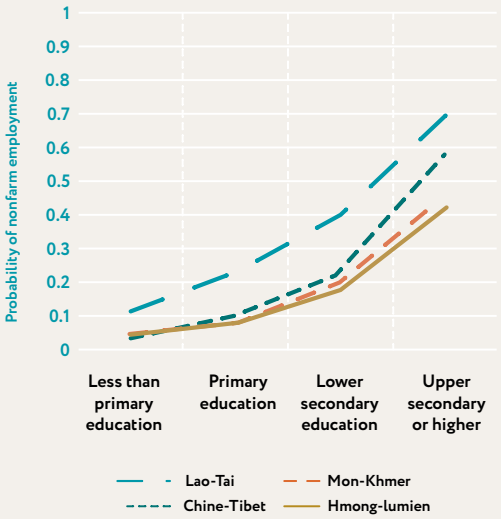


FIGURE 8.19.
Probability of nonfarm employment by education and ethnic group, 2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.
Note: Predicted probability conditional on labor force participation.

DETERMINANTS OF NONFARM EARNINGS

A regression analysis shows that the average rate of return of an additional year of education is relatively low at 4.9 percent for the private sector, compared with international standards. Workers with an additional year of schooling earn 4.9 percent more, on average, in the private sector, and 2.6 percent more in the public sector (Figure 8.20). The premium is relatively low compared to international standards, which range between 8 and 13 percent. Years of experience are better rewarded in the public sector. An additional year of experience increases earnings by 3.9 percent in the public sector, compared to 2.9 percent in the private sector.

In 2018/19, an additional year of schooling raised the hourly wage in the private sector by 4.9 percent, on average, declining from 6.4 percent in 2012/13.[17] The decline was larger in the public sector, where the returns on an additional year of education fell from 5.2 percent to 2.6 percent because of efforts to contain the public wage.[18] Education premiums fell for all education levels. In 2018/19, workers who completed primary education earned 19 percent more than workers with less than primary education, compared to 40 percent in 2012/13 (Table 8.1).

The decline was driven by the manufacturing sector, where a lot of jobs were shed. In the nongovernment services sector, the average returns on education increased. The returns on an additional year of schooling in the industry sector (particularly manufacturing) declined from 5.8 percent in 2012/13 to 4.4 percent in 2018/19. In contrast, the average rate of return on an additional year of education in the nongovernment services sector increased by 2 percentage points to 6.4 percent, reflecting a scarcity in the supply of highly trained workers in the labor market.

17 Similarly, Onphanhdala and Suruga (2007) estimated the returns on education in the private sector at 6.4 percent using the 2002/03 LECS3.

18 Fiscal consolidation commenced in 2014, mainly through curbs on civil service compensation and capital spending cuts. Given wages and salaries rose higher than expected in late 2013, the Government of Lao PDR suspended civil services wage increases in 2014 and lowered the recruitment quota (IMF 2015). Nevertheless, the number of public sector jobs increased. In 2018, the Government of Lao PDR was committed to civil service reform by not adjusting the wage index and allowing the civil service headcount to decline through attrition, and going forward, by keeping the rise in the wage index at the rate of inflation.

Workers who completed primary education and vocational training were most affected by declining education premiums. Education premiums in the industry sector disappeared among these workers. At the same time, their premiums in the nongovernment services sector hardly improved, partly due to the low demand for their skill set in this sector (Table 8.1). In 2012/13, workers with vocational training earned 80 percent more than those with less than primary education in the industry sector. This premium disappeared in 2018/19. Moreover, the wage premium for vocational graduates in the services sector only slightly improved from 41 percent to 48 percent. For the other skill groups, a decline in the schooling premiums in the industry sector was offset by a decent increase in the skill premium in the services sector. For example, the education premium for workers with upper secondary education in the industry sector fell from 96 percent to 32 percent, but it increased from 42 percent to 70 percent in the services sector.

A gender earnings gap, that was not present six years ago, has now emerged. In the private sector, females receive 10 percent lower earnings on average than their male counterparts in similar occupations and locations, and with similar qualifications (Table 8.2). The gap is large in the industry sector at 17 percent, compared to 8 percent in the nongovernment services sector and no gender gap in the public sector. Thus, not only have females become less likely to be employed in off-farm jobs, they are being paid less in these jobs too.

TABLE 8.1.

Education premiums relative to workers with less than primary education (percent of wages), 2012/13–2018/19

		COMPLETED PRIMARY	COMPLETED LOWER SECONDARY	COMPLETED UPPER SECONDARY	VOCATIONAL TRAINING	UNIVERSITY
Total	2012/13	0.372***	0.612***	0.735***	0.761***	1.010***
	2018/19	0.134	0.282***	0.411***	0.256***	0.544***
Public sector	2012/13	−0.339	−0.127	0.029	0.115	0.336***
	2018/19	−0.319	−0.200	−0.155	−0.268	−0.051
Private sector	2012/13	0.395***	0.662***	0.844***	0.874***	1.152***
	2018/19	0.187**	0.347***	0.550***	0.374***	0.763***
Industry	2012/13	0.566***	0.607***	0.963***	0.805***	1.255***
	2018/19	0.123	0.220	0.317*	0.219	0.551***
Services	2012/13	0.121	0.303*	0.418**	0.413**	0.720***
	2018/19	0.165	0.439***	0.703***	0.476***	0.905***

Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The Mincer regression assumes nonlinear returns on education. The dependent variable is the log hourly wage. Regressions control for experience, gender, and regional and urban dummies. Sample includes individuals between ages 18 and 65. Observations weighted by population weights. *** p<0.01, ** p<0.05, * p<0.1. See Table C.4 and Table C.5 for regression results.

TABLE 8.2.

Gender gap (percent of wages), 2012/13–2018/19

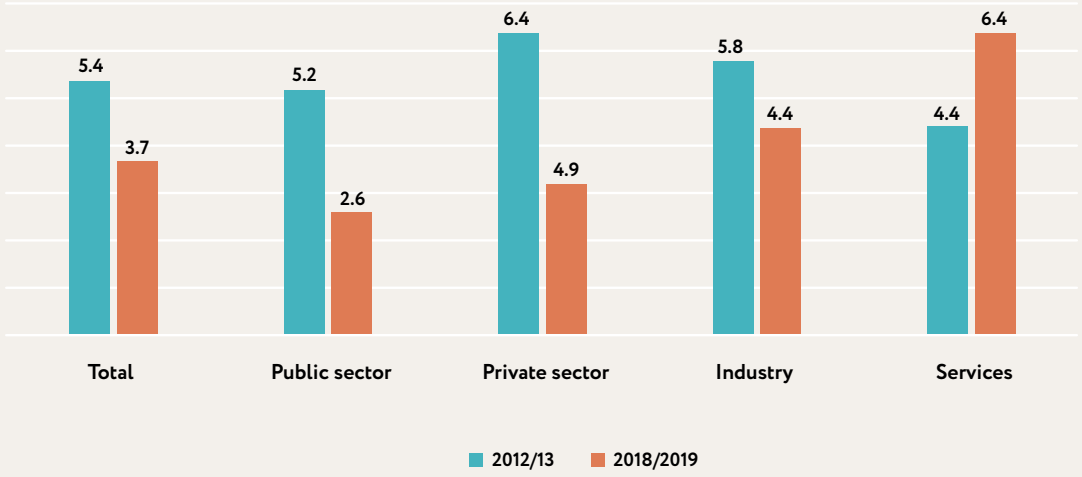
	TOTAL	PUBLIC SECTOR	PRIVATE SECTOR	INDUSTRY	SERVICES
2012/13	0.006	−0.089	0.010	−0.050	0.011
2018/19	0.054**	0.020	0.102***	0.173**	0.081*

Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The Mincer regression assumes nonlinear returns on education. The dependent variable is the log hourly wage. Regressions control for educational attainment, experience, and regional and urban dummies. Sample includes individuals between the ages 18 and 65. Observations weighted by population weights. *** p<0.01, ** p<0.05, * p<0.1. See Table C.4 and Table C.5 for regression results.

FIGURE 8.20.

Linear returns to education (percent of wages), 2012/13–2018/19



Source: Authors' calculation based on LECS 5 and LECS 6.

Note: The Mincer regression assumes linear returns on education. The dependent variable is the log hourly wage. Regressions control for experience, gender, and regional and urban dummies. Sample includes individuals between ages 18 and 65. See Table C.2 and Table C.3 for regression results.

SUMMARY

Limited nonfarm job opportunities weighed negatively on poverty reduction. Nonfarm employment reversed course during the past six years. The expanding energy sector did not create enough jobs. All sectors—except the public and hospitality sectors—experienced a net decline in employment. The retail trade sector shed the most jobs, followed by the manufacturing sector. Net nonfarm job creation was observed only in Vientiane capital and urban areas in the northern region. The number of nonfarm jobs substantially declined in Khammuane and Bolikhamxay in the central region, followed by Champasack and Attapeu in the southern region. Low-paid workers exited off-farm labor markets.

The off-farm labor market has become more unfavorable for uneducated workers, youth, and women. The slackening off-farm labor market has failed to offer young workers opportunities. The chances of engaging in nonfarm economic activities among employed youth have declined, preventing them from leaving agriculture or otherwise becoming unemployed. A gender opportunity and pay gap also increased. Analysis in Chapter 6 suggests that despite limited opportunities in the local labor market, workers found job opportunities elsewhere, and the money they sent home contributed to poverty reduction. The next chapter explores the role of migration and remittances in substituting for nonfarm income in driving poverty reduction.

8 MIGRATION AND REMITTANCES: WHERE OPPORTUNITIES LIE

Migration is often motivated by the search for better living conditions, or as a coping mechanism to negative shocks, such as conflict or adverse climatic conditions. It is one of several ways that households adapt to structural economic shifts from a predominantly rural and agriculture-based economy to a more urbanized economy where service and industry prevail. Because migration yields the promise of higher earnings, it may help poor households to emerge from poverty. For example, through remittances, migration can be used by households to overcome credit constraints due to imperfect markets (Azam and Gubert 2006). Migration is used to overcome other market imperfections or rationing as well, as is the case when it is used to gain access to better services and infrastructures, such as higher (say, secondary) levels of education. It is also a strategy used to diversify income sources to cope with shocks, including conflicts and weather-related shocks (Stark and Bloom 1985; Rosenzweig and Stark 1989). This is true whether migration is permanent or temporary, internal, or international. In the literature, the determinants of the decision to migrate are often divided into two factors: (i) push factors (domestic forces at the place of origin); and (ii) pull factors (conditions at the destination).

In Lao People's Democratic Republic (PDR), remittances have become increasingly crucial as a source of household livelihood. A recent decline in nonfarm job opportunities in domestic labor markets, especially in rural areas, coupled with significant wage differentials could be strong push factors for rural-urban migration and international migration. Analysis in Chapter 6 shows that remittances channeled by migrants have become a source of livelihood for nearly 15 percent of households. Remittances are considered as a potential substitute for nonfarm employment. For many, remittances are the main source of income, especially in rural areas where the share of rural households receiving remittances steadily increased and almost doubled during the past decade.

This chapter explores further the links between migration and poverty in Lao PDR. Remittances sent by migrants have contributed to poverty reduction in Lao PDR as income poverty decompositions in Chapter 6 showed. Between 2012/13 and 2018/19, remittances accounted for 3.7 percentage points of the reduction in poverty nationally, and 4.1 percentage points in rural areas. However, knowledge about the types of migration undertaken by the poor is limited. The rate of urbanization and regional connectivity is expected to accelerate in the near future, with both internal and regional migration becoming an important factor in the poverty reduction strategy. This chapter aims to answer the following key questions: i) what are the patterns of internal (rural-urban) and regional migration in Lao PDR and ii) do remittances from migrants have a poverty-reducing effect? The methodologies employed in this chapter include: i) descriptive analysis of migration patterns by poverty status, region, and ethnic group; and ii) propensity score matching to quantify the impact of remittances on poverty reduction.

INCIDENCE OF MIGRATION

Migration has increased substantially during the last decade to reach a relatively high level in 2018/19, when one in five households (18.3 percent) declared at least one migrant. A distribution of migrants by year of departure shows that 9 out of 10 migrants did move after 2008, with a sharp increase from 2015 onwards (Figure 9.1). The same pattern of recent migration is observed across socioeconomic groups. However, migration from poor households started slightly later but has surpassed that of nonpoor households in recent years. About 60 percent of migrants from poor families left in 2017 or 2018. Overall, the survey suggests that 376,000 Laotians have migrated, 200,000 domestically, and 176,000 internationally.

The incidence of migration is lower among ethnic minorities and male-headed households. Households whose head is from the Lao-Tai ethnic group are more likely to have a migrant. Analysis suggests that 21.6 percent of households headed by a Lao-Tai have at least one migrant, against 12.4 percent for Mon-Khmer, 10.6 percent for Chine-Tibet, 5.3 percent for Hmong-lumien, and 12.2 percent for the other ethnic groups. The incidence of migration is 27.6 percent for households headed by women, which is 10.8 percentage points higher than that of households headed by males.

Households in urban areas, and the southern and central regions are more likely to have a migrant. About 20 percent of urban households have at least one migrant, against only 15 percent for rural households. The southern and central regions have 26.8 percent and 21.5 percent of households having a migrant, respectively, about double the share of households with a migrant in Vientiane capital and the northern region. Differences are more pronounced at the granular provincial level. Three provinces–Champasack, Khammuane, and Savannakhet—stand out with about a third of households having a migrant (Figure 9.2). At the opposite end of the spectrum, migration is much lower for households living in Borikhamxay, Sekong, and Xaysomboun provinces, with less than 5 percent of households having a migrant.[19]

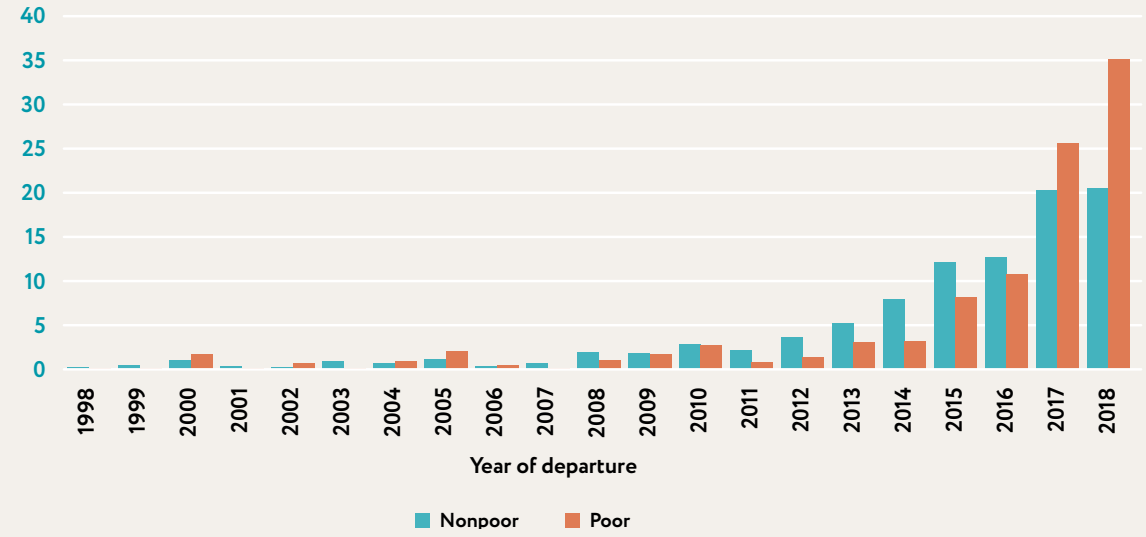
There is a strong correlation between the change in the availability of jobs in the areas and migration, suggesting limited job opportunities are among the main factors driving the migration decision. In particular, the three provinces with the highest proportion of migrants also experienced significant nonfarm job losses between 2012/13 and 2018/19 (Figure 9.3). See Chapter 8 for more details). As discussed later in the chapter, the biggest proportion of migrants went to Vientiane Capital or Thailand, suggesting a desire for migrants to move closer to the economic center where job availability is higher. Econometric analysis reveals that the probability of a household to send a migrant was 6.5 percent higher in provinces that experienced job losses between 2012/13 and 2018/19, compared to those living in provinces with job creation.[20]

19 Subsequent analysis on outmigration will exclude Sekong due to the small sample size.

20 See Table C8 in Annex 3 for more details. The absence of social cohesion could be another push-factor for migration that warrants further investigation. In 2018/19, about 14 percent of households lived in areas where domestic violence is named as a serious problem in the village. The econometric analysis reveals that the probability of a household having any migrants was 3.9 percent higher for those living in such a village. More disaggregated data is required to further investigate this issue.

FIGURE 9.1.

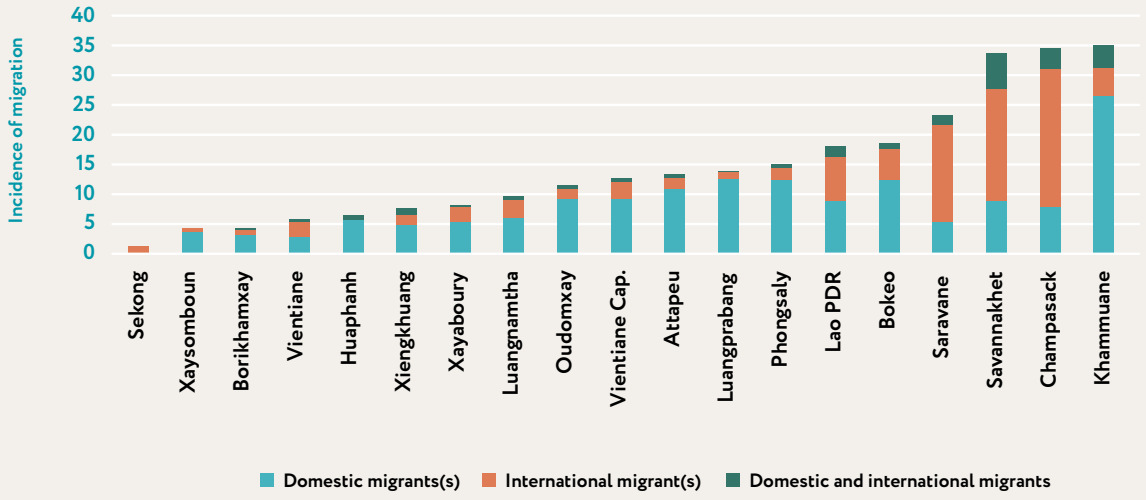
Percentage of households with at least one migrant departing in a given year



Source: Authors' calculation based on LECS 6.

FIGURE 9.2.

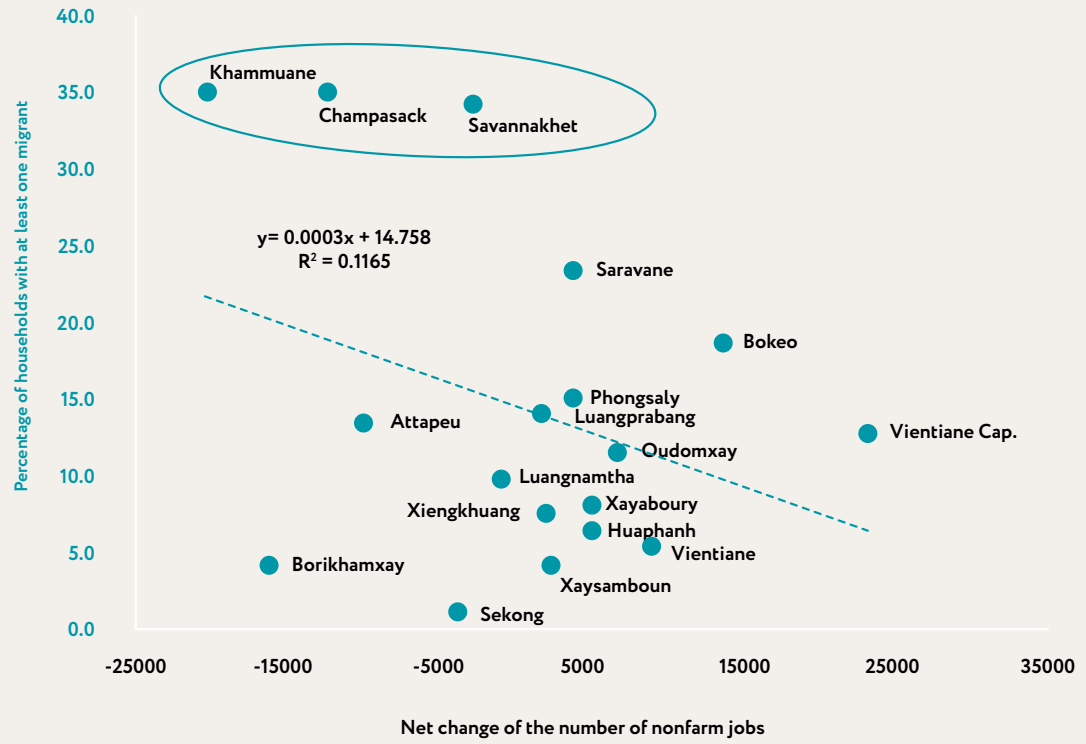
Percentage of households with at least one migrant by province



Source: Authors' calculation based on LECS 6.

FIGURE 9.3.

Proportion of households with at least one migrant as a function of job creation



Source: Authors' calculation based on LECS 6.

PROFILE OF MIGRANTS

Migrants from urban households tend to be male. About 56 percent of migrants from urban households are male, compared to 49 percent from rural households (Figure 9.4a). Differences are more pronounced at the provincial level. Luangnamtha and Huaphanh provinces have a very high proportion of male migrants (79 percent and 63 percent, respectively). In contrast, females make up the majority among migrants from Xaysomboun (59 percent) and Savannakhet and Phongsaly (56 percent).

Youth constitute the vast majority of migrants. About 7 in 10 migrants are less than 30 years of age, with significant variation by ethnicity and location (Figure 9.4b). The Lao-Tai tend to migrate at a later age. Approximately one-third of Lao-Tai migrants are age 30 and over, compared to 21 percent among ethnic minorities. Most provinces have between 60 and 84 percent of migrants departing before the age of 30 years. Thus, most migrants (75 percent) tend to be a child of the household's head. Often, parents will remain behind while their son or daughter migrates, probably with the hope of better access to economic opportunity and the prospect of receiving remittances.

FIGURE 9.4.

Distribution of migrants' gender and age by location of origin

Source: Authors' calculation based on LECS 6.

MIGRATION PATTERNS

Slightly more than half of the migration is domestic, but decisions to migrate domestically or internationally vary by gender, ethnicity, and location of origin. About 53.2 percent of migrants relocated to a different part of the country, while 46.8 percent moved abroad. Female migrants are more inclined to move abroad, with 54.5 percent of female migrants moving abroad. In contrast, 60.6 percent of men moved within Lao PDR. The Lao-Tai ethnic group is the only group with a majority (51.3 percent) of migrants moving abroad since three-quarters of ethnic minorities migrated domestically (Figure 9.5). International migration is predominant in provinces bordering Thailand—Champasack, Saravane, and Savannakhet. In these provinces, between 68.4 percent and 75.8 percent of migrants moved abroad. Attapeu is an exception with 90 percent of migrants relocating domestically, similar to northern provinces such as Huaphanh and Luangprabang, which also had more than 90 percent of originating migrants relocating domestically.

Half of domestic migration occurs within the same province, with another 30 percent of domestic migrants moving from their home provinces to Vientiane capital—a sign that rural-urban migration is important (Figure 9.6). While Vientiane was a popular destination, migrants were more likely to move to job centers within the same region. Unlike other regions where urban jobs were shed, jobs were created in urban areas in the northern region during the past few years. More than 60 percent of domestic migrants from the north

moved within the region, mostly to Bokeo, Luangprabang, and Oudomxay, which are the more vibrant provinces in the region (Figure 9.7). One-third of the Chine-Tibet migrants also moved to or within Phongsaly. In the south, slightly more migrants (35 percent) relocated to Champasack—the second most populous province in Lao PDR—than moved to Vientiane Capital (34 percent). The same pattern is observed in the central region. Although it is not possible to directly analyze rural to urban migration because the Lao Expenditure and Consumption Survey (LECS 6) did not collect information on whether the migrant moved to rural or urban areas, the fact that domestic migration is mainly toward the capital city is a good proxy that one can rely on to highlight the importance of rural to urban migration.

The province with the highest domestic outmigration flow is Khammuane, followed by Champasack (Figure 9.8). Khammuane also experienced the largest nonfarm job losses in Lao PDR during the past few years (see Figure 8.5, Chapter 8). Vientiane capital is the only province that experienced significant net gains from domestic migration. Likewise, while most provinces saw the shedding of nonfarm jobs, the capital city created more than 20,000 net nonfarm jobs between 2012/13 and 2018/19 —the highest in Lao PDR.

Geographic proximity and cultural similarities, including language, are key factors in determining the destination country for international migration. Champasack and Savannakhet have the highest international outmigration flows with more than 50,000 migrants having left to other countries (Figure 9.9). Neighboring Thailand is by far the

FIGURE 9.5.
Destination of migrants by location, gender, and ethnicity

Source: Authors' calculation based on LECS 6.

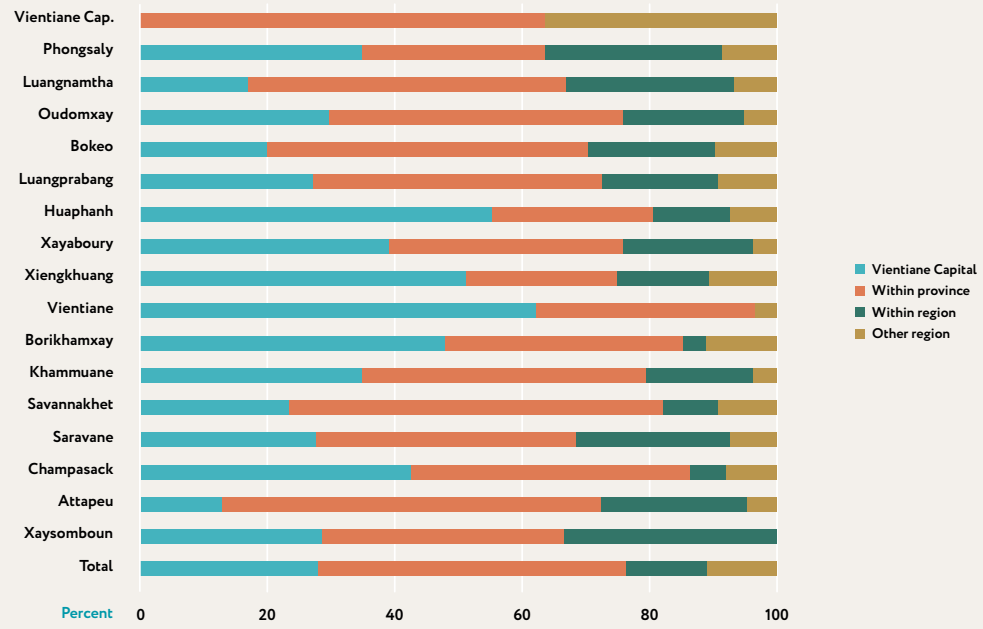
main destination for international migrants. Nine in ten international migrants move to Thailand (Figure 9.10). Other countries that also account for a relatively significant but small proportion of international migrants are China (2.9 percent), Vietnam (2.7 percent), and, to some extent, the United States (1.8 percent). Those living in Luangnamtha and Phongsaly are more likely to move to China, which is the closest bordering country and linguistically similar. Migrants from Huaphanh, Oudomxay, and Sekong provinces tend to move to Vietnam. The Lao-Tai ethnic group is more inclined to move to Thailand. The Chine-Tibet ethnic group almost exclusively moves to China. The Hnong-lumien group has a more diversified set of destination countries for international migration, with four dominant countries: United States (45 percent), China (35 percent), Thailand (12 percent), and Vietnam (9 percent).

Migrants from provinces experiencing job losses are more likely to migrate abroad. A clear pattern emerges when grouping provinces in two groups, those that lost jobs and those that experienced job creation over time. Migrants from provinces with job losses are more likely to migrate abroad. Approximately 55 percent of migrants from provinces with job losses relocated abroad, compared with only 30 percent for other provinces.

REMITTANCES AND POVERTY

Approximately one in seven households received remittances. The probability of receiving remittances varies significantly across welfare status, location, ethnicity, and age of the household head. Mirroring the migration pattern, the likelihood of receiving remittance transfers is 15.8 percent for nonpoor households, double that of poor households (Figure 9.11). Households from the Lao-Tai ethnic group are more likely to receive remittances than other ethnic groups, and households living in the northern region are least likely to receive transfers. However, migrants from rural households are more likely to send remittances back home than their urban counterparts. Despite a higher rate of migration among urban households, only 11.8 percent of urban households receive remittances, compared to 16.3 percent of rural households. Given that most migrants are the son or daughter of the household head, the probability of receiving remittances is correlated with the household head's age. For households whose head is less than 30 years old, only 6 percent receive remittances. This proportion increases steadily with the head age to reach 23.8 percent for household heads who are more than 60 years old.

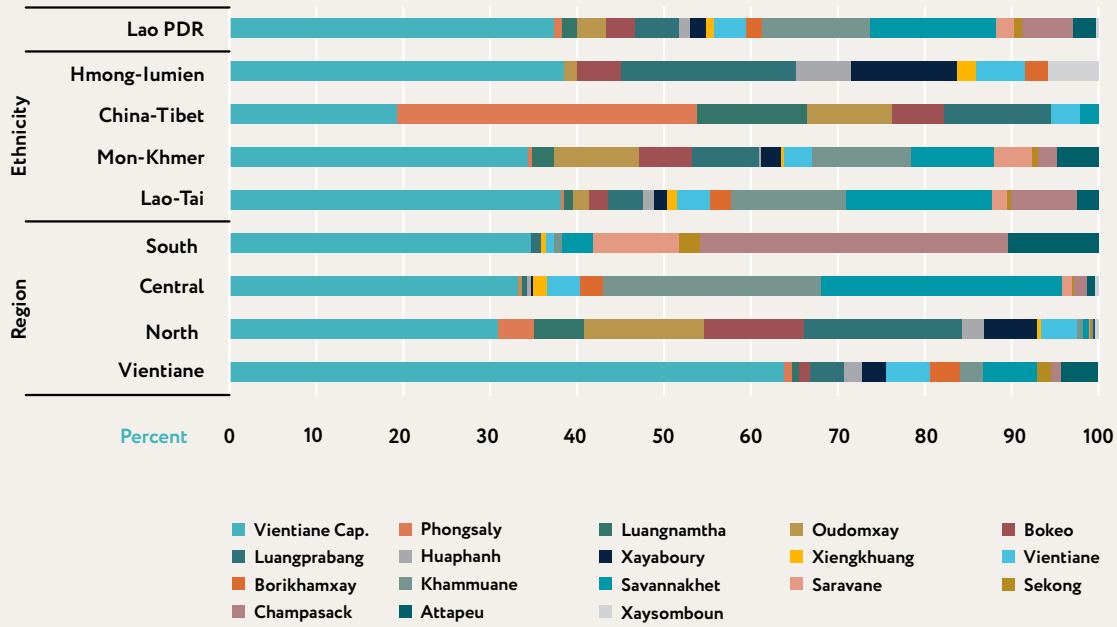
FIGURE 9.6.
Destination of domestic migrants by province



Source: Authors' calculation based on LECS 6.

FIGURE 9.7.

Destination of domestic migrants by region and ethnicity



Source: Authors' calculation based on LECS 6.

FIGURE 9.8.

Net domestic migration by province

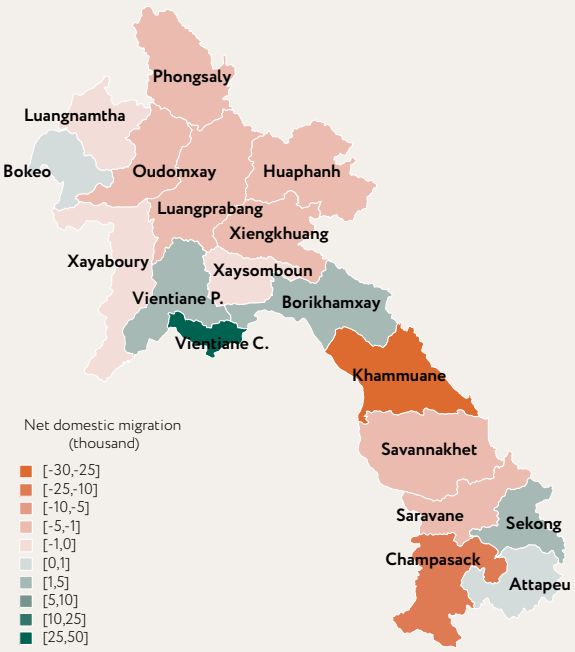
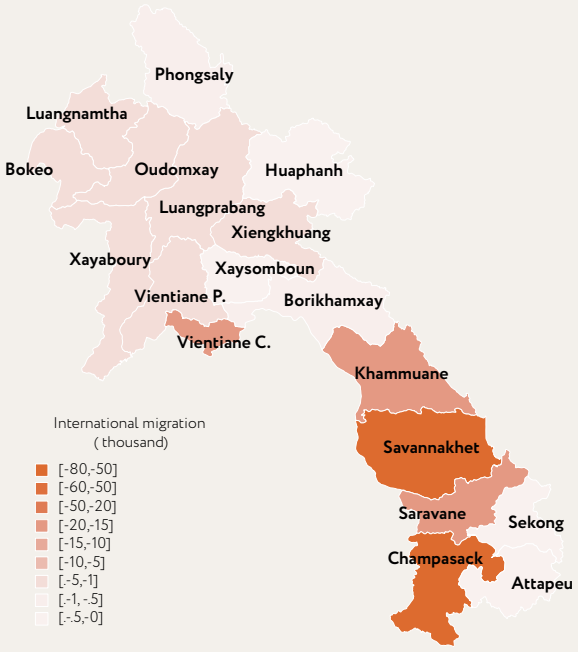


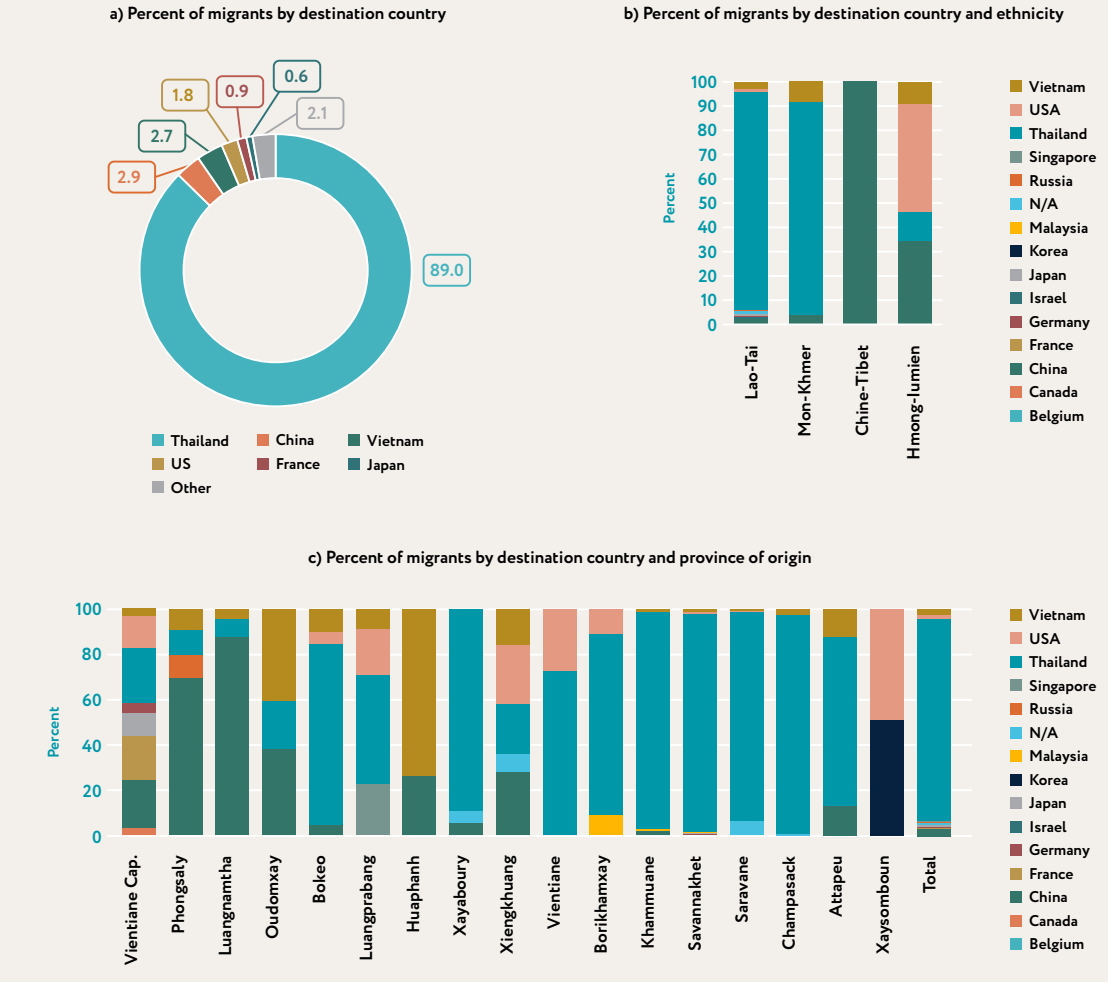
FIGURE 9.9.

International migration by province



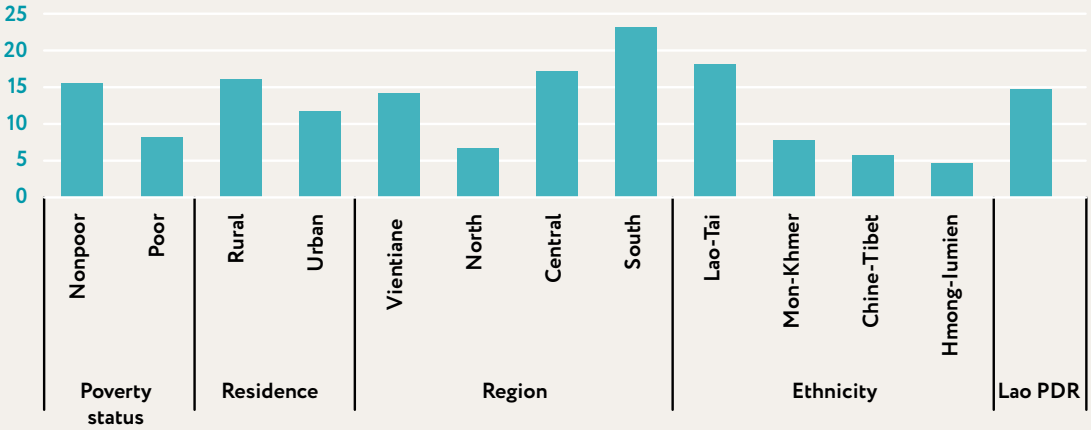
Source: Authors' calculation based on LECS 6.

FIGURE 9.10.
Destination of international migrants



Source: Authors' calculation based on LECS 6.

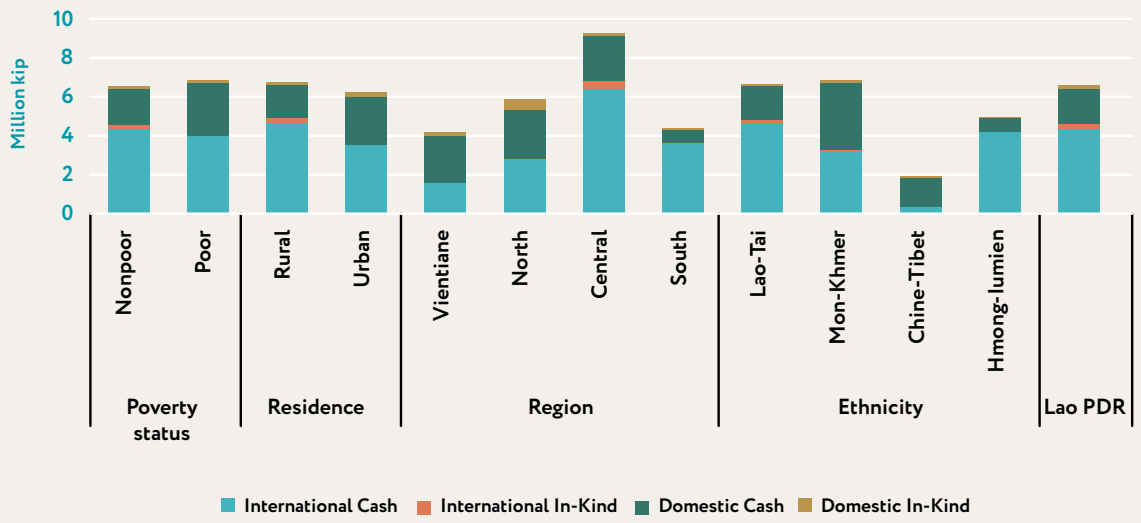
FIGURE 9.11.
Percentage of households receiving remittances



Source: Authors' calculation based on LECS 6.

FIGURE 9.12.

Average annual remittances per recipient household.



Source: Authors' calculation based on LECS 6.

In 2018/19, average annual remittances were estimated at ₭N 6.6 million per recipient household, most of which was received in cash (Figure 9.12). This remittance amount is about half the minimum wage, which was set by the government at ₭N 1.1 million per month. For those receiving, remittances represent 17.9 percent of the households' consumption, suggesting that remittances are a crucial element of household livelihood. Transfers from abroad represent 70 percent of the total remittances.

The level of remittance flows varies across ethnicity, region, and gender of the household head. Although poor households are more likely to receive remittances than nonpoor households, the average amount of remittances received by the poor is not significantly different from that of the nonpoor (6.9 and 6.6 million, respectively). Transfers are highest in the central region, averaging ₭N 9.3 million compared to less than ₭N 6 million in the other regions. By ethnicity, remittances sent by migrants from Chine-Tibet households are small, with an annual average of less than ₭N 2 million per recipient household. The average amount received by female-headed households is ₭N 5.8 million, which is 15 percent lower than the male-headed household average (₭N 6.8 million).

Estimates using the propensity score matching technique suggest poverty would be 2.2 percentage points higher without remittances. The propensity score matching-based estimates compare the welfare of households that benefitted from remittances to a "similar" household that did not. It relies on the socio-demographic characteristics of a household to create a "counterfactual" among those who did not receive remittances. The comparison between a household and its counterfactual will provide an estimate of the impact of remittances on poverty. The results of this estimation suggest that remittances contribute to reducing the share of the population in poverty by 2.2 percentage points (Table 9.1). One caveat of this technique is that it does not take into account the effect of an increase in labor supply on job availability and wages when remaining household members enter the labor market to compensate for remittance income losses. Given slack in the labor market, the probability of finding a job is low, and the poverty impact could be larger than 2.2 percentage points, moving toward the upper end estimate from the naïve approach, which estimates that poverty would increase by 5.4 percentage points if none of the households received remittances without any replacement income.

TABLE 9.1.

Impact of remittances on poverty

	COEF.	AI ROBUST STD. ERR	Z	P>IZI	[95% CONF.	INTERVAL]
National model	−2.2	0.054	−40.4	0.000	−2.289	−2.077

Source: Authors' calculation based on LECS 6.

Note: z is the z-score and p is the p-value associated with rejecting the significant impact of remittances on poverty.

See Table C.8 for estimation results..

Remittances will likely reduce substantially due to the COVID-19 pandemic, creating a big challenge for the vulnerable who rely on remittances to survive. It is anticipated that the pandemic will result in job losses among migrants, and many have returned due to these circumstances. As discussed, 70 percent of remittances are from abroad. Most Lao nationals living abroad are in Thailand, with an estimated 300,000 documented migrants (Department of Employment, Thailand), equivalent to around 15 percent of Lao PDR's labor force (2017). Most of the migrants work in the sectors that have been negatively affected by the COVID-19 pandemic and response measures imposed by the Government of Thailand (IOM 2016). More than 70 percent of Lao migrants are active in manufacturing (29 percent), food and beverage sales (20 percent), general labor (12 percent), and general services (10 percent). Given the pattern of migration, the potential negative effect of a decrease in remittance inflows is expected to be more pronounced in rural areas, and central and southern provinces. The loss of remittances from migrants employed in vulnerable sectors could impoverish poor and vulnerable households or push them further into poverty.

SUMMARY

Migration has increased during the last decade, with a sharp rise from 2015 onward. In 2018/19, one in five households had at least one migrant. A lack of job opportunities is one of the main push factors. A high incidence of migration is observed in provinces that experienced a significant decline in nonfarm employment. Domestic and international migration are equally important. Rural to urban migration is significant with most domestic migrants moving to the capital city. For international migration, geographic proximity and cultural similarities are key factors in determining the destination country. The preferred destination is Thailand, with almost 90 percent of migrants choosing to migrate there. International migration is predominant in the central and southern provinces of Champasack, Saravane, and Savannakhet. Young people are more likely to migrate. Seven out of 10 migrants are under 30 years old.

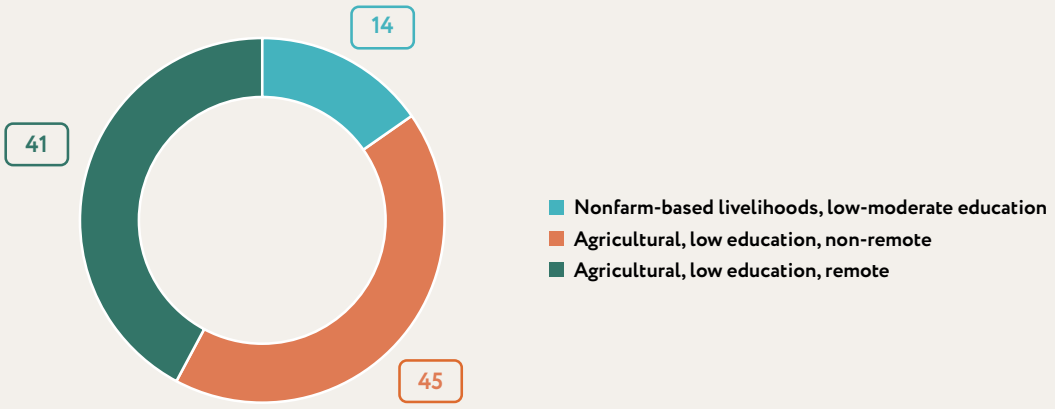
Remittances have become a crucial element of household livelihood strategies and contributed to poverty reduction. The analysis suggests that one in seven households receive remittances, which are more frequently observed in Vientiane Capital, central, and southern Lao PDR, particularly among the Lao-Tai ethnic group. Although the average amount received by the poor is not significantly different from that received by the nonpoor remittances represent a higher share of consumption in poor households. The use of the econometric technique that takes into account behavioral responses shows that remittances have a significant impact on welfare. Without remittances, poverty would be 2.3 percentage points higher.

10 SETTING THE AGENDA FOR POVERTY REDUCTION

Poverty continues to decline in Lao People's Democratic Republic (PDR), but with nearly a fifth of the population living in poverty, significant challenges on poverty reduction remain. Growth has been less inclusive, creating few, unevenly distributed jobs. This has resulted in rising unemployment and limited livelihood diversification options. However, rising external demand for non-rice commodities has helped increase the household farm incomes that drove poverty reduction in previous years. Thus, increasing farm productivity has been central to poverty reduction, supplemented by rising remittances.

Tackling poverty requires addressing the specific challenges faced by the poor in Lao PDR. The poverty profile suggests that poor people tend to have low education and are usually engaged in low-productivity work. Two-thirds of the poor live in households headed by a person with incomplete primary education or no formal education. Among the latter, the incidence of poverty is 10 times higher than among those living in households headed by a person who at least completed secondary education. Given such low educational attainment, the poor are twice as likely to engage in low-productivity agriculture. With links between poverty, geography, and livelihoods, poverty is substantially higher in rural areas in the north and central regions of the country.

FIGURE 10.1.
Composition of the poor by subgroup (in percentage)



Source: Authors' calculation based on LECS 6.

However, the poor are far from being a uniform group as they face different constraints requiring tailored interventions. Before making policy recommendations for the poverty reduction agenda, it is important to first classify different groups of the poor to identify the binding constraints each specific group faces and hence the required interventions and how these should be targeted. A categorization using cluster analysis (Box 10.1, Figure 10.1) points to three distinct subgroups of the poor in Lao PDR. The first subgroup —accounting for 41 percent of the poor—consists of remote, low-educated, agricultural households, which are predominantly ethnic minorities. The second group, which constitutes 45 percent of the poor, consists of better-connected but poorly-educated agricultural households, a majority of them Lao-Tai. The third group makes up only 14 percent of the poor and consists of households engaged mainly in low-productivity nonfarm activities, with levels of education that are still low but higher than in the other two groups. The key constraints faced by each group are laid out in light of the analysis presented in Chapters 6 to 9.

The first group of the poor predominantly comprises ethnic minority households engaged only in low-productivity farming in remote areas with low educational attainment. They are mostly concentrated in midland and upland areas. They have limited access to services, reflected in a lower level of electricity access than the other subgroups (57 percent compared to almost full coverage) and inadequate road connections, with only 64 percent of households living in villages with all-weather roads (Figure 10.3). Educational attainment is also low, with 78 percent of the working-age population having no formal education or incomplete primary schooling. The average length of education in this group is only two years. These characteristics together exclude them from nonfarm opportunities, and they rely almost entirely on agricultural income with little access to remittances. Moreover, low education and limited access to markets also constrain their farm productivity, as analysis in Chapter 7 shows. The key constraints to escaping poverty for this group are low education and lack of access to public services, resulting in limited off-farm opportunities and low agricultural incomes.

The second group of the poor comprises households engaged mainly in low-productivity farming, also with low educational attainment, but living in less remote rural areas. About half of them live in lowland areas and are Lao-Tai (52 percent). Access to electricity is almost universal, and nearly 90 percent of them live in villages with all-weather roads. They also have above-average access to land. However, they still have low levels of education, with half of the working-age members having no-formal education and another 40 percent having just primary education. Consequently, their farm productivity is low, and access to nonfarm opportunities is limited, so they are exclusively agricultural. Their key constraints are low agricultural productivity and lack of off-farm opportunities rather than poor access to public services or land.

BOX 10.1. CLUSTER ANALYSIS

Cluster analysis is a statistical technique that groups a population into a set of meaningful subgroups called clusters, based on the observed characteristics for each individual. Clusters are identified by partitioning individuals into groups to maximize the similarity of individuals within each group while maximizing the dissimilarity between groups. The analysis involves three steps: i) selection of clustering variables; ii) selection of the clustering procedure and the number of clusters; and iii) validation and interpretation of the results by defining and labeling the obtained clusters.

First, the following variables are chosen for the cluster analysis:

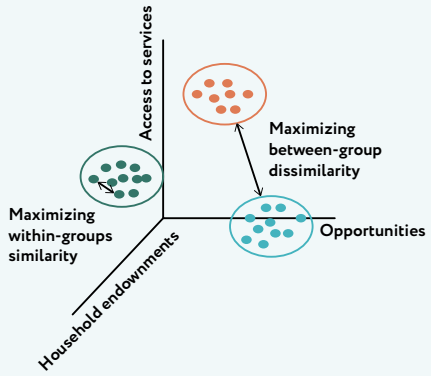
1. Household endowments in terms of physical assets (for example, ownership of land and other productive assets) and human capital (for example, educational attainment and exposure to health shocks);

2. Opportunities as measured by household livelihoods (that is, having a nonfarm wage income, having a nonfarm business); and

3. Access to services, such as, having an improved water source, an improved toilet, and an electricity connection.

Second, hierarchical clustering is chosen over partitional clustering. The hierarchical procedure starts with each individual as a separate cluster (that is, there are as many clusters as individuals), and then combines the clusters sequentially, reducing the number of clusters in each step. In contrast, the partitional procedure requires an initial specification of the number of clusters (K). The hierarchical procedure is preferred because the number of clusters among the poor is not known before. In addition, the exercise helps inform the degree of segmentation among the poor. The analysis is based on results obtained using the Wards linkage clustering algorithm, and the optimal number of clusters is identified by inspection using a dendrogram complemented by quantitative criteria—the Calinksi and Harabasz pseudo F-Index or the Duda-Hart Je(2)/Je(1) index.

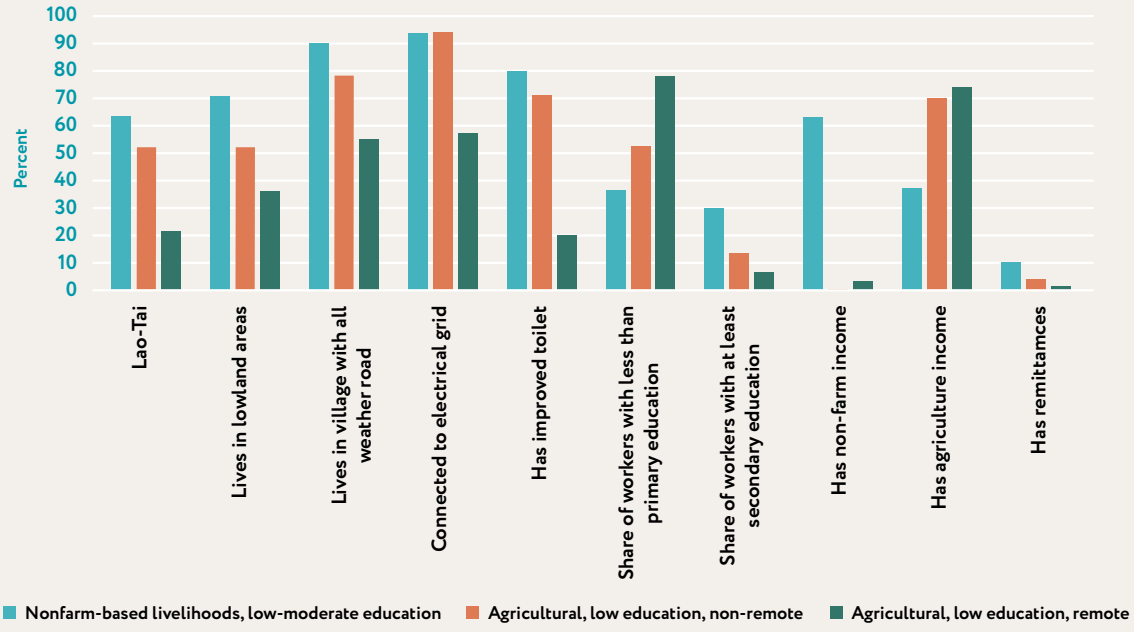
FIGURE 10.2.
Illustration of cluster analysis



Source: Authors' calculation based on LECS 6.

Finally, three clusters emerge as the optimal number of subgroups of the poor. They are profiled to label and interpret the results of the clustering exercise. For robustness checks, a profile for three subgroups generated using the k-means clustering was also reviewed and showed similar results. The profile comprises variables included in the cluster analysis and those excluded, such as ethnicity and geographical location.

FIGURE 10.3.
Profile of the poor by subgroup



Source: Authors' calculation based on LECS 6.

The third and much smaller group consists of people already making the transition out of agriculture but engaged mainly in low-productivity nonfarm activities in rural and urban areas. These are mostly Lao-Tai (63 percent) and live in lowland areas (71 percent), concentrated in the central and south regions. They have adequate access to infrastructure. Access to electricity is almost universal, and nearly 90 percent of households live in villages with all-weather roads. A third of working-age members in this group have secondary or post-secondary education, with a smaller share of uneducated workers than the other two groups. Their participation in nonagricultural activities is relatively high at 63 percent, though most are in self-employment rather than wage jobs. Only 16 percent of the households have a wage income. Despite being able to participate in nonfarm labor markets, with moderate education levels, they are trapped in low-productivity, low-paying jobs in the informal sector. The absence or the decline of low-skilled jobs limits their opportunities given their low level of education, as outlined in Chapter 8.

The grouping also highlights the geographical dispersion of the poor and how constraints vary across places. The first group resides in upland areas that tend to be more remote. The poor in this group can be found in northern provinces, particularly in Huaphanh, Luangprabang, Oudomxay, and Xiengkhuang, as well as Saravane, Savannakhet, and Sekong in the central and southern regions. The poor in the second group, who are better connected and reside mostly in lowland areas, are concentrated in the central region. Also, there are the urban poor who have transitioned out of agriculture. The variation suggests that instead of targeting a specific geographical region, interventions are required across the country, but tailored to the specific challenges in targeted areas.

The analysis suggests five strategic areas for poverty interventions targeting the different groups of the poor. These include:

- Public infrastructure investment to improve connectivity and close service delivery gaps in remote areas
- Agricultural productivity enhancement among agricultural households who have limited access to nonfarm opportunities given their low levels of education

- Low-skill wage job creation to expand opportunities for households to transition out of agriculture—especially for youth and women.
- Investment in education and skills development to expand opportunities for the next generation
- Expansion of social safety nets for households with limited access to opportunities

PUBLIC INFRASTRUCTURE INVESTMENTS TO IMPROVE CONNECTIVITY AND ACCESS TO SERVICES IN REMOTE AREAS

The constraints faced by the first group of the poor—predominantly ethnic minorities in remote areas—suggest the need for area-based investments to improve access to services. The programs should target midland and upland areas where connectivity is lagging. The targeted areas for the group include upland districts in both northern and central provinces. They should also focus on improving farmers' access to markets to raise their farm income—a sole source of livelihoods. Improving connectivity and social service delivery would be crucial for both social inclusion and economic integration of ethnic minorities who form this group.

BOOSTING AGRICULTURE PRODUCTIVITY IN BOTH LOWLAND AND UPLAND AREAS

The evidence presented in Chapter 7 suggests agricultural productivity in Lao PDR is influenced by crop choice, access to markets and credit, farmer skills, and input application. It also shows that agricultural productivity is low among subsistence rice farmers and higher among commercialized farmers. Agriculture support and livelihood interventions, therefore, need to focus on (i) facilitating crop-diversification from a sole focus on rice to high-value crops appropriate to specific regions; for example spices, tea, and industrial crops in the northern region and coffee in the southern region; (ii) improving access to credit among farmers; (iii) promoting market linkages; and (iv) expanding extension services to enhance farmer skills and usage of agricultural inputs. The geography of poverty is changing. The central region has become home to a larger share of the poor, whereas poverty has declined in the northern region. The central region deserves special attention, given it is the most predominantly rice-based farming region where an additional push for crop diversification would be beneficial. Borikhamxay, Khammuane, and Savannakhet have a higher share of people whose primary pathway out of poverty is an improvement in agricultural productivity. Xayaboury province in the north and Champasack province in the south also have a considerable number of poor people who are limited by low agricultural productivity.

TABLE 10.1.
Characteristics and key constraints by subgroup

	AGRICULTURAL, REMOTE, LOW EDUCATION	AGRICULTURAL, LESS-REMOTE, LOW EDUCATION	NONAGRICULTURAL, MORE URBAN, LOW-MODERATE EDUCATION
Education	Very low	Low	Average, but low
Agriculture land	Average	Above average	Above average
Physical Assets	Low	Above average	Above average
Livelihood	No off-farm opportunity, exclusively farm No remittances	No off-farm opportunity, exclusively farm No remittances	Nonfarm, with limited farm activities
Location	Rural, remote, mostly highland and midlands	Rural, nonremote, mostly lowland and midlands	Rural and urban
Ethnicity	Ethnic minorities	Lao-Tai dominant, but considerable share of minorities also	Lao-Tai dominant
Key constraint	Inadequate assets, social safety net, and low agricultural income	Low agricultural income and lack of off-farm opportunities	Low productivity in nonfarm sector
Pathway out of poverty	Social inclusion and economic integration	Increased agriculture productivity	Access to better nonfarm jobs

LOW-SKILLS JOB CREATION, TARGETING YOUTH AND WOMEN

One group of the poor is identified by a lack of access to productive nonfarm jobs. Some of the poor are constrained by a lack of access to productive nonfarm jobs and their opportunities for diversifying livelihoods have become further limited by a decline in nonfarm employment over the past six years, narrowing the options for transitioning to more gainful employment. Many of these people are youths and women. The chances of young people finding nonfarm jobs are 10 percentage points lower than those of adults between ages 25 and 55, while women's chances of nonfarm employment have declined by half to 20 percent. Creating the opportunities requires a two-pronged approach, at the macro and micro levels.

- Creating a more business-friendly regulatory environment. This policy needs to be revisited to create a more business-friendly environment. Lao PDR is also ranked 154 out of 181 in doing business rankings—the second lowest in Southeast Asia. It ranks poorly on procedures for paying taxes, protecting minority investors, and enforcing contracts. A combination of these factors constrains job creation in non-resource sectors.

- Promoting employment targeting youth and women. In the short term, youth and women's transition to off-farm jobs could be facilitated through employment promotion projects ranging from skills training and public works to enterprise promotion projects.

INVESTING IN EDUCATION AND SKILLS DEVELOPMENT TO EXPAND ACCESS TO OPPORTUNITIES FOR THE NEXT GENERATION

A cross-cutting constraint across all subgroups is lack of education, which affects the income-generating capacity of households in both agriculture and non-agriculture sectors. To break the vicious cycle of poverty, investments that promote progression to secondary education are needed. Given that more children drop-out of education in villages without higher grade schools, these should address both supply and demand constraints. The lack of money and lack of interest are often-cited reasons for dropping out of school. This suggests that conditional cash transfers could be a useful tool for promoting education investments among the poor.

EXPANDING SOCIAL SAFETY NETS

With limited options for livelihood diversification, most of the poor rely solely on agricultural income and are highly vulnerable to shocks driven mainly by exogenous factors. Droughts and floods periodically cause severe damage to farmers, while price volatility adds another source of unpredictability. The low level of education also suggests that most of the remaining poor households could be trapped in poverty, given their limited options. The impact of social transfers on poverty reduction has been limited as social assistance spending remains low. Thus, expanding social safety nets is necessary for poverty alleviation in Lao PDR.

The third group of the poor is most likely affected by shocks induced by the COVID-19 pandemic. A decline in travel and tourism demand has affected nonfarm employment in related sectors including retail trade, transport, and food and accommodation businesses. While the impact of social distancing measures could be felt broadly in the economy, workers in construction and personal services are potentially the most disrupted by these measures, since their labor conditions will leave them without income when work is disrupted. Most of the poor in this group are self-employed workers as well as owners of and employees working for informal (that is, unregistered) micro and small enterprises. Revenue losses from the outbreak and the containment measures will force some businesses to either close down or retrench workers leaving those in the informal sector with little or no income and protection. The impact on the other two groups is expected to be moderate, mainly through supply chain disruption and border closures that could cause price spikes and food shortages or affect transport of farm inputs and products.

The pandemic poses an additional challenge to poverty reduction strategies as it could push more people into poverty, reinforcing the importance of effective social safety nets. The resulting global economic slowdown also threatens the local economy. The impacts in Lao PDR are exacerbated by high informality of employment and dependence on remittances, implying that household income losses from economic disruptions will be severe. The pandemic is expected to disproportionately affect the poor and the vulnerable; the latter are likely to fall back into poverty due to their limited ability to cope with income losses. The new poor tend to look like the third group of poor, being more urban and employed in informal nonfarm work (informal services, construction, and manufacturing).

In short, reducing poverty further in Lao PDR requires a broad set of interventions targeting different groups of the poor. The combination of low education and jobless growth has limited opportunities for the poor, increasing their reliance on agriculture even while farm productivity among most of the poor is low. Ethnic minorities are further constrained by their low connectivity and access to public services. Interventions to reduce poverty in Lao PDR should therefore focus on i) closing the infrastructure gap and improving connectivity in remote areas where ethnic minorities are concentrated; ii) boosting agricultural productivity through promoting crop diversification and commercialization; iii) introducing employment promotion programs; iv) adopting supply- and demand-side measures to promote education investment and skills development to improve access to opportunities for the next generation; and v) expanding safety nets to provide additional income for households with limited livelihood options and to cushion impacts from external shocks.

Given the complexity of emerging issues, some areas warrant further attention. A better understanding of labor market dynamics is needed; for example, the impact of labor market regulations on job creation, the drivers behind job losses in the retail trade sector, and the spillover effect from foreign investment on the local labor market. External shocks, either economic-related, climate-related or health-related, have become more frequent. The impact of shocks on household livelihoods and well-being, and households' ability to cope with shocks merit further investigation. Additionally, more investment is needed to close data gaps and provide better understanding of the linkages between the growth pattern and poverty reduction.

Although poverty is falling, inequalities in its prevalence persist and broad interventions are needed to maintain momentum, especially given the challenge of COVID-19

ANNEX 1: POVERTY METHODOLOGY 2019

SURVEY METHODOLOGY

The Lao Statistics Bureau (LSB) has conducted the Lao Expenditure and Consumption Survey (LECS) at five-year intervals since 1992/93. The sixth and most recent round (LECS 6) was implemented between June 2018 and May 2019, following the LECS 5, which was conducted between April 2012 and March 2013. The objective of the surveys is to assess the living standards of the population and generate necessary data for socioeconomic planning. The LECS is the primary source of official poverty statistics in Lao People's Democratic Republic (PDR), providing critical information for monitoring progress on poverty reduction, identifying poor and vulnerable groups, and ultimately informing government policies for poverty eradication.

Survey design. The sample size of LECS 6 is composed of 10,144 households from 634 villages. The sample selection is conducted in two steps. The first stage is a selection of sample villages using the probability proportional to size sampling method. Villages are grouped by province and village type (urban, rural area with road access, and rural area without road access). The number of sample villages in each province is between 25 and 46 depending on the number of villages and the number of households in every survey area. In the second-stage sampling, 16 households are selected in every village.

Survey instrument. LECS 6 has five main modules: i) *diary*—questions on daily expenditure and consumption of the household; ii) *household questionnaire*—questions on the situation of the household, such as employment, health, income, housing, and business activities; iii) *time used*—questions on time allocation of the household; iv) *prices*—questions on prices in the market and in the shops of the village; and v) *village questionnaire*—questions concerning the village for the village chief. The household questionnaire comprises 15 modules, including household composition, parents, education, employment, migration, nutrition, asset ownership, housing conditions, construction activities, household business, agriculture, health, purchases of durable goods, income and transfers, and borrowing and lending. Daily expenditure and consumption of the household is collected using a 14-day diary in LECS 6—a switch from a 30-day diary used between LECS1 and LECS 5. The change was to improve data quality and reduce fieldwork costs. A decline in the number and values of transactions recorded by households over the

diary period was observed in the previous LECS surveys, meaning that additional days of fieldwork resulted in lower quality of the data being collected. While these changes in survey design have their own benefits, they come at the nontrivial cost of comparability of poverty estimates. The change in the diary period was implemented in tandem with the collection of 30-day diary data on a smaller sample to enable the reconciliation of survey estimates over time. Among 10,028 responding households, consumption expenditure of 8,457 households was recorded using a 14-day diary and consumption expenditure of 1,576 households was recorded using a 30-day diary. This practice allows for a comparison of trends in a consumption aggregate before and after the change in methodology.

Data collection. The fieldwork was conducted for a period of 12 months, starting from 1 June 2018 to 31 May 2019. The LECS data was collected, for the first time, using computer-assisted personal interviews. The method speeds data turnaround and the release of data.

NEW POVERTY METHODOLOGY

In most countries, poverty methodology is occasionally revised to reflect the evolution of the minimum basic needs and spending patterns of the poor caused by growth in living standards and changes within society. For Lao PDR, poverty methodology was first established in 1997/98 and there has not been any revision since then. Robust growth and policy reforms during the last decade call for the need to rebase poverty measures to align them to the minimum basic needs and spending patterns of the Lao population in 2019. The revisions are based on LECS 6 data and include two major changes: i) construction of a new consumption basket and redefinition of minimum living standards; and ii) redefinition of a consumption aggregate to standardize the treatment of nonfood items, which were previously excluded or unconventionally treated.

POVERTY LINE

The new poverty line is constructed using LECS 6 following the cost of basic needs approach to replace the existing poverty line, which was established more than 20 years ago based on LECS2, which was conducted in 1997/98.

A reference poor population is defined through an iterative process and a basket of goods is defined to reflect the consumption patterns of this group. From this iterative process, households in the 10th through 30th percentiles of spatially- and temporally- deflated consumption per capita are chosen as a reference group. Quantities of food consumed by the reference group are converted into calories consumed using calorie conversion factors. The average cost per calorie is calculated by dividing the total calorie content of the basket by total basket expenditure. This amount was multiplied by the minimum nutritional requirement for Lao PDR, which is defined as 2100 Kcal per day, to give the food poverty line.

To set a poverty line, the nonfood component is inflated from the food poverty line using the share of nonfood to total consumption. As there is no consensus on whose share of nonfood consumption should be used, the nonfood poverty line is the simple average of the lower and upper bounds. The lower bound is the amount that households who have total consumption equal to the food poverty line spend on nonfood items. The upper bound is the amount that households who have food consumption equal to the food poverty line spend on nonfood items. In practice, the average share of nonfood in total consumption of a group of households whose total consumption (food consumption) is within a 10-percent range of the food poverty line is used to inflate the food poverty line for obtaining the lower bound (the upper bound).

The consumption basket represents the consumption patterns of the reference group. The food basket comprises a list of food items, each accounting for more than 0.2 percent of total food expenditure. The nonfood basket comprises a list of nonfood items, each accounting for more than 0.3 percent of nonfood expenditure. Newly added items include duck, fresh milk, vegetable oil, coffee, take away food, utilities, medicines, gasoline, diesel oil, mobile phone charges, among others, reflecting changes in the consumption pattern of the reference group.

TABLE A.1.

Reference basket for the poverty line

	FOOD ITEM		NONFOOD ITEM
1	Glutinous rice	1	Beer Lao
2	Ordinary rice	2	Sticky rice alcohol
3	Dry noodles	3	Cigarettes
4	Bread and cake	4	Men's clothes
5	Pork	5	Women's clothes
6	Beef	6	Footwear
7	Chicken	7	House rent
8	Duck, other bread birds	8	Water charges
9	Meat from hunting	9	Electricity
10	Fresh fish	10	Charcoal and Firewood
11	Fresh milk	11	Detergent
12	Eggs	12	Medicines
13	Vegetable oil	13	Parts and accessories incl. car batteries
14	Oranges	14	Repair charges
15	Chili	15	Gasoline, petrol
16	Cucumber	16	Diesel oil
17	Cabbage	17	Bus fares
18	Chinese cabbage	18	Mobile phone charges
19	Bamboo shoots	19	Tuition fees
20	Sweets	20	School uniform
21	Coffee	21	Stationery for school
22	Salt	22	Toilet soap
23	Spices and seasoning	23	Shampoo
24	Bottled water	24	Toothpaste
25	Soft drink		
26	Vegetables, grown		
27	Vegetables, collected		
28	Take away food		

Spatial price indices are used for spatially deflating the consumption aggregate. Spatial price indices for four different regions (Vientiane capital, north, central, south), with each split into urban and rural areas creating eight subregions in total, are derived using the consumption basket and spatial price data according to Equation 1:

$$\hat{p} = S_0^f \frac{\sum_{i=1}^{N_f} s_{0i} p_{ri}}{\sum_{i=1}^{N_f} s_{0i} \bar{p}_i} + S_0^{nf} \frac{\sum_{i=1}^{N_{nf}} s_{0i} p_{ri}}{\sum_{i=1}^{N_{nf}} s_{0i} \bar{p}_i},$$

where S_0^f is the share of food expenditure and S_0^{nf} is the share of nonfood expenditure of the reference group, s_{0i} is the fixed share of item i in the consumption basket, p_{ri} is price of item i in each of the eight subregion r, and $\bar{p}_i$ is the national average price. The unit prices from the diary are used to obtain prices for food items and village prices for nonfood items. The consumer price index data is used for nonfood items for which village prices are not available including mobile phone charges, housing rents, water charges, electricity charges, repair charges and car batteries. In addition, the consumption aggregate is adjusted for within survey temporal price differences. Data collection in the LECS spans a period of 12 months. The consumption

aggregate is therefore adjusted for price differences across different months of the data collection period using the monthly consumer price index (CPI) between June 2018 and May 2019.

CONSUMPTION AGGREGATE

Lao PDR followed common practices in using a consumption-based welfare measure. This is reflected in the LECS questionnaire, where detailed information on household consumption expenditure is recorded. A household diary is the principal instrument for collecting expenditure and consumption data on a detailed set of food and nonfood items. In LECS 6, there is a change in the treatment of nonfood consumption items that were previously excluded or unconventionally treated. This follows a well-established practice according to which a consumption aggregate is constructed by putting together four building blocks, namely (i) food consumption, (ii) nonfood consumption, (iii) durable goods, and (iv) housing.[21]

Food consumption. Food consumption in the consumption aggregate includes food items purchased from the market, own food consumption, food received in-kind, and meals in restaurants and hotels purchased by household members. Following previous practices, self-valued consumption expenditures have been used in generating own food consumption and in-kind food expenditure.

Nonfood consumption. Nonfood consumption items in the diary comprise alcohol and tobacco; clothing and footwear; housing; fuel and utilities rent; transportation and communication education expenses; medical expenses; personal care; utensils and sundries; recreation; accommodation in hotels and lodges; expenses on traditional and cultural activities; and other miscellaneous items.

Durable goods: Durable goods are included in nonfood consumption expenditure using the user cost approach. Their purchase and repair costs are obtained from the households' purchase of durables module with a 12-month recall period. The straight-line depreciation method is applied given the lifespan of each item. Any purchases of these durable goods recorded in the household diary are discarded. This treatment is different from previous LECS in which durable goods were selectively included using a nonstandard methodology. User costs of most lumpy durable goods were excluded from the consumption expenditure, and for those that were included, an implicit assumption of a single-year lifespan was applied.

Housing: Rents are imputed for households using a hedonic regression that estimates the rental value of dwellings based on the dwelling's characteristics and location. Due to a small rental market in Lao PDR, the implicit rental value reported by households is used in the estimation. In contrast, housing rent payments or imputed rent were totally excluded from the consumption aggregate in previous LECS.

OTHER ADJUSTMENTS TO THE CONSUMPTION AGGREGATE

Per capita normalization: As in previous LECS, household per capita consumption is used to derive individual consumption needs. This treats all members as equal consumption units, implying that household needs increase proportionally with household size.

Treatment of meals in restaurants and hotels: Households recorded meals prepared outside the household if i) they bought meals for themselves, ii) they bought meals for someone else, or iii) someone bought meals for them. The first category is included in the consumption aggregate. To avoid double counting, it was decided to treat meals a household member buys for someone else as a cost of hosting and include this in the consumption aggregate. Meals bought for a household member by someone else were thus excluded from the consumption aggregate.

Adjustment for rice: Rice is the staple food in Lao PDR. Some households did not record any rice consumption in the diary. This could be attributed to the nature of the diary that rice consumed from the amount purchased before the diary started is not recorded. As in previous LECS, rice consumption is imputed for households with zero rice consumption using the household's reported rice consumption per capita in the nutrition module. The imputed rice consumption value is calculated using a ratio of the household rice consumption to the urban or rural regional average multiplied by the regional rice expenditure per capita and the household size.

21 Deaton and Zaidi (2002).

Treatment of education expenses: In LECS 6, (monthly) education expenses recorded by households using a 14-day diary are lower on average than those recorded by subsample households using a 30-day diary. At the same time, the amount recorded in a 30-day diary and the recalled amount from the education module are not significantly different from each other. A possible explanation is that education is a low-frequency item which could be underreported when using a 14-day diary. For example, a lump sum expenditure on tuition fees for studying abroad is usually made once or twice a year. A decision was made to use the information on education expenses based on recalling, with a 365-day recall period obtained from the education module. Table A.2 summarizes methodological changes between the 1997/98 poverty methodology and the revised 2018/19 poverty methodology.

BACKWARD UPDATING OF POVERTY METHODOLOGY AND COMPARABILITY ISSUES

One of the central objectives of the LECS is to provide information for monitoring progress on poverty reduction. Two conditions are required to examine the evolution of poverty by comparing poverty estimates between 2012/13 and 2018/19 using the revised poverty methodology: i) the poverty line that is updated with an appropriate adjustment for price changes and ii) a consumption aggregate that is comparable between 2012/13 and 2018/19.

TABLE A.2.
Methodological changes to the consumption aggregate

COMPONENT		NONFOOD ITEM
Food expenditures		
Food items	30-day diary	14-day diary
Unreported rice consumption	Imputed rice using information from the nutrition module	Imputed rice using information from the nutrition module
Nonfood expenditures		
Durable goods	Some durables are excluded. Those included are assumed a single-year lifespan	All durables are included using the straight-line depreciation method given the lifespan of each item
Housing	Excluded	Imputed rent
Education	30-day diary	1-year recall from the education module
Other nonfood items	30-day diary	14-day diary

TABLE A.3.
Poverty trends by poverty measurement methodology

METHODOLOGY		2007/08	2012/13	2018/19
I.	2018/19 poverty methodology + backward updating		24.6	18.3
II.	2018/19 poverty methodology + survey-to-survey imputation		23.8-24.1	18.3
III.	1997/98 poverty methodology + 30-day diary sample	27.6	23.2	18.6

Poverty line. The newly constructed 2018/19 poverty line is updated backward for differences in the price levels between 2012/13 and 2018/19 to obtain poverty estimates for 2012/13. The process of updating the poverty line is done in three steps: i) adjustments for temporal price differences between LECS 5 and LECS 6; ii) adjustments for spatial price differences; and iii) adjustments for temporal price differences within the survey since data collection spans a period of 12 months. Deflators are calculated from a Laspeyres price index based on the new reference basket, separately for the food and nonfood baskets. The unit prices from the diary are used to obtain prices for food items and village prices for nonfood items. The consumer price index data is used for a within-survey temporal price adjustment and some nonfood items for which village prices are not available.

Consumption aggregate. The consumption aggregate is re-constructed for LECS 5 with the following adjustments: i) all durables are included using the straight-line depreciation method similar to LECS 6; ii) imputed rent is added using a hedonic regression—the same approach adopted for LECS 6; and iii) education expenditure is replaced by a 1-year recall from the education module.

A major difference that remained between the LECS 5 and LECS 6 consumption aggregate is the diary period. It is important to note that an incomparability issue of consumption and poverty estimates over time might have emerged from the change in the LECS questionnaire design from a 30-day diary to a 14-day diary. There are several examples drawn from country experiences showing that small differences in a questionnaire design can lead to an underestimation or overestimation of poverty levels. While examples are restricted to a changing recall period and the number of consumption items, the changing diary period in the LECS must be approached with caution. Table A.3 shows poverty trends using different methodologies. The trends shown in this report are based on Method I as described previously, showing that poverty declined by 6.3 percentage points to 18.3 percent in 2018/19. In Method II, survey-to-survey imputation techniques are employed to impute a consumption aggregate for LECS 5 to establish comparability as far as possible given a difference in the number of diary days between the two surveys. The imputation techniques are carried out using Stata's Multiple Imputation (MI) package. The imputed point estimates show similar poverty trends as obtained from other methods, with a slightly slower pace of poverty reduction than that of Method I. Table A.4 shows the consumption models used for the survey-to-survey imputation. Lastly, Method III makes use of a 30-day diary subsample from LECS 6 to extend the existing poverty trend based on 1997/98 poverty methodology. They are representative only at the national level. The LECS 5 poverty line is updated for differences in the price levels in 2018/19 and a consumption aggregate is constructed for a 30-day diary subsample based on the previous definition. This method renders a lower rate of poverty reduction with poverty declining by 4.6 percentage points from 23.2 percent to 18.6 percent in 2018/19.

TABLE A.4.

Consumption models used for survey-to-survey imputation

CHARACTERISTICS OF HOUSEHOLD HEAD	MODEL I	MODEL II	
		URBAN	RURAL
Age	0.007	−0.003	0.005
	(0.002)	(0.004)	(0.002)
Age−squared ('00)	−0.005	0.005	−0.003
	(0.002)	(0.004)	(0.002)
Male	0.035	−0.083	0.047
	(0.022)	(0.035)	(0.027)
Marital status, base = never married			
Married	−0.069	−0.040	−0.053
	(0.034)	(0.063)	(0.044)
Divorced	0.064	0.093	0.038
	(0.045)	(0.073)	(0.062)
Separated	−0.178	−0.321	0.004
	(0.042)	(0.068)	(0.053)

CHARACTERISTICS OF HOUSEHOLD HEAD	MODEL I	MODEL II	
		URBAN	RURAL
Widowed	−0.046	−0.069	−0.042
	(0.041)	(0.066)	(0.054)
Ethnicity, base = Lao-Tai			
Mon-Khmer	−0.028	0.061	−0.063
	(0.012)	(0.027)	(0.013)
Chine-Tibet	−0.028	0.225	−0.144
	(0.025)	(0.069)	(0.027)
Hmong-Iumien	−0.071	0.085	−0.092
	(0.016)	(0.038)	(0.018)
Highest education, base = no formal education			
Some primary	0.052	0.092	0.021
	(0.013)	(0.032)	(0.014)
Completed primary	0.107	0.106	0.102
	(0.012)	(0.028)	(0.013)
Completed lower secondary	0.140	0.156	0.160
	(0.016)	(0.032)	(0.018)
Completed upper secondary	0.258	0.140	0.304
	(0.022)	(0.036)	(0.03)
Completed vocational training	0.123	0.249	0.195
	(0.023)	(0.038)	(0.034)
University degree	0.303	0.253	0.284
	(0.031)	(0.041)	(0.061)
Labor market status, base = out of labor force			
Employed	0.070	0.258	−0.101
	(0.025)	(0.05)	(0.028)
Unemployed	0.013	0.014	−0.013
	(0.02)	(0.039)	(0.024)
Sector of employment, base = not employed			
Agriculture	0.138	−0.253	0.072
	(0.097)	(0.05)	(0.105)
Mining	0.077	0.114	0.134
	(0.113)	(0.139)	(0.125)
Manufacturing	0.155	−0.254	0.138
	(0.093)	(0.099)	(0.101)
Utilities	0.156	0.052	0.000
	(0.119)	(0.14)	0.000
Construction	0.202	−0.054	0.202
	(0.093)	(0.099)	(0.101)
Wholesale and retail	0.309	−0.023	0.277
	(0.093)	(0.099)	(0.103)
Transport and communication	0.262	0.101	0.206
	(0.096)	(0.102)	(0.108)
Hotels and restaurants	0.096	−0.207	−0.074
	(0.106)	(0.116)	(0.121)
Media and entertainment	0.000	−0.397	−0.186
	0.000	(0.139)	(0.162)
Other services	0.178	−0.129	0.200
	(0.094)	(0.099)	(0.105)
Public services	0.144	−0.074	0.131
	(0.092)	(0.094)	(0.101)
Other	0.259	0.059	0.178
	(0.103)	(0.125)	(0.114)

CHARACTERISTICS OF HOUSEHOLD HEAD	MODEL I	MODEL II	
		URBAN	RURAL
Employment status			
Paid worker	−0.208	−0.128	−0.020
	(0.095)	(0.079)	(0.105)
Self-employed, nonfarm	−0.270	−0.128	−0.071
	(0.095)	(0.084)	(0.104)
Self-employed, farm	−0.252	0.000	0.009
	(0.1)	0.000	(0.111)
Agriculture X Own agricultural land	0.225	−0.063	0.309
	(0.1)	(0.22)	(0.132)
Agriculture X Planting crops	−0.298	0.049	−0.339
	(0.1)	(0.222)	(0.13)
Household characteristics			
Household size	−0.242	−0.248	−0.222
	(0.008)	(0.013)	(0.009)
Household size−squared	0.011	0.010	0.010
	(0.001)	(0.001)	(0.001)
Dependency ratio	−0.075	−0.047	−0.141
	(0.023)	(0.043)	(0.026)
Ratio of employed people	0.073	0.105	0.028
	(0.02)	(0.039)	(0.024)
Housing			
Toilet	0.121	0.128	0.098
	(0.012)	(0.044)	(0.012)
Safe water	0.031	0.100	0.057
	(0.01)	(0.018)	(0.011)
Electricity	0.057		0.049
	(0.015)		(0.014)
Number of rooms	0.021	0.012	0.028
	(0.005)	(0.005)	(0.008)
Asset ownership			
TV, video, or phone	0.076	0.262	0.059
	(0.017)	(0.056)	(0.016)
Car	0.239	0.265	0.191
	(0.013)	(0.02)	(0.017)
Motorcycles	0.139	0.108	0.134
	(0.012)	(0.032)	(0.012)
Computer	0.206	0.247	0.181
	(0.018)	(0.023)	(0.033)
Fridge	0.143	0.279	0.121
	(0.011)	(0.025)	(0.012)
Air conditioner	0.202	0.206	0.129
	(0.021)	(0.025)	(0.042)
Washing machine	0.092	0.095	0.099
	(0.013)	(0.018)	(0.018)
Village type			
Rural with road access	−0.065		0.069
	(0.01)		(0.016)
Rural without road access	−0.122		
	(0.019)		
Province dummy	**Yes**	**Yes**	**Yes**
R-squared	**0.44**	**0.45**	**0.43**

Note: Robust standard errors are in parentheses.

ANNEX 2: UNEMPLOYMENT

TABLE B.1.
Monthly unemployment rate

SURVEY MONTH	SAMPLE SIZE	Including own-use production workers in the labor force		Excluding own-use production workers from the labor force	
		Seasonal unemployment as unemployed (%)	Seasonal unemployment as out of the labor force (%)	Seasonal unemployment as unemployed (%)	Seasonal unemployment as out of the labor force (%)
January	819	27.3	8.1	31.2	9.6
February	785	26.0	4.8	31.0	6.1
March	808	21.6	4.8	25.0	5.8
April	720	27.3	5.4	32.5	6.8
May	885	19.2	3.3	22.3	4.0
June	942	7.8	2.3	10.7	3.2
July	834	5.0	1.9	6.7	2.5
August	902	9.9	2.7	11.9	3.2
September	837	8.0	3.4	10.2	4.4
October	719	6.5	3.3	8.4	4.3
November	801	12.6	3.0	16.1	4.0
December	976	21.8	4.7	26.0	5.9
Total	10,028	15.7	3.8	19.2	4.8

Note: The LECS 6 survey runs from June 2018 to May 2019.

ANNEX 3: REGRESSION ANALYSIS

TABLE C.1.

Nonfarm labor force participation

	PROBIT		LPM	
	2012/13	2018/19	2012/13	2018/19
	(1)	(2)	(3)	(4)
Age	0.082***	0.114***	0.018***	0.023***
	(0.005)	(0.006)	(0.001)	(0.001)
Age squared	−0.001***	−0.001***	−0.000***	−0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Male	−0.164***	0.075***	−0.045***	0.014***
	(0.043)	(0.022)	(0.011)	(0.005)
Some primary	0.238***	0.335***	0.027***	0.033***
	(0.045)	(0.045)	(0.006)	(0.006)
Completed primary	0.404***	0.630***	0.057***	0.092***
	(0.041)	(0.039)	(0.006)	(0.005)
Completed lower secondary	0.754***	1.215***	0.148***	0.262***
	(0.045)	(0.045)	(0.008)	(0.009)
Completed upper secondary	1.145***	1.599***	0.298***	0.384***
	(0.050)	(0.051)	(0.012)	(0.012)
Completed vocational training	1.673***	1.896***	0.493***	0.520***
	(0.063)	(0.068)	(0.017)	(0.019)
University degree	1.755***	2.051***	0.504***	0.553***
	(0.075)	(0.059)	(0.018)	(0.013)
North	−0.555***	−0.742***	−0.185***	−0.242***
	(0.040)	(0.045)	(0.012)	(0.013)

	PROBIT		LPM	
	2012/13	2018/19	2012/13	2018/19
	(1)	(2)	(3)	(4)
Central	−0.370***	−0.625***	−0.150***	−0.223***
	(0.039)	(0.044)	(0.012)	(0.013)
South	−0.380***	−0.627***	−0.149***	−0.221***
	(0.042)	(0.047)	(0.013)	(0.013)
Urban	0.652***	0.680***	0.191***	0.190***
	(0.023)	(0.022)	(0.007)	(0.007)
Mon-Khmer	−0.302***	−0.273***	−0.055***	−0.055***
	(0.029)	(0.029)	(0.005)	(0.005)
Chine-Tibet	−0.455***	−0.212***	−0.051***	−0.025***
	(0.071)	(0.057)	(0.008)	(0.008)
Hmong-Iumien	−0.454***	−0.355***	−0.079***	−0.073***
	(0.051)	(0.041)	(0.007)	(0.007)
Other ethnic minorities	−0.222*	0.198	−0.048*	0.038
	(0.120)	(0.133)	(0.025)	(0.029)
Constant	−2.426***	−3.316***	−0.038	−0.158***
	(0.114)	(0.126)	(0.024)	(0.023)
Observations	23,135	24,251	23,135	24,251
R-squared	0.262	0.311	0.287	0.333

Note: Probit is the probit model and LPM is the linear probability model. Dependent variable is nonfarm labor participation conditional on being in the labor force. It is equal to 0 for individuals employed in agriculture or unemployed, and it is equal to 1 for individuals working outside agriculture. Sample includes individuals between ages 15 and 65. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE C.2.

Mincer regression assuming linear returns on education, 2012/13

	(1) TOTAL	(2) PUBLIC	(3) PRIVATE	(4) INDUSTRY	(5) SERVICES
Years of education	0.054***	0.052***	0.064***	0.058***	0.044***
	(0.004)	(0.010)	(0.004)	(0.008)	(0.006)
Male	0.008	−0.022	0.007	−0.071	0.003
	(0.051)	(0.114)	(0.053)	(0.084)	(0.069)
Experience	0.022***	0.036***	0.025***	0.024***	0.030***
	(0.004)	(0.011)	(0.005)	(0.009)	(0.006)
Experience squared	−0.000***	−0.001**	−0.000***	−0.000	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
North	−0.255***	−0.249**	−0.269***	0.015	−0.018
	(0.044)	(0.098)	(0.046)	(0.082)	(0.067)
Central	0.054	−0.116	0.050	0.229***	0.021
	(0.042)	(0.105)	(0.043)	(0.071)	(0.058)
South	0.146***	−0.006	0.176***	0.401***	0.066
	(0.051)	(0.109)	(0.056)	(0.129)	(0.066)
Urban	0.212***	−0.055	0.271***	0.252***	−0.022
	(0.034)	(0.071)	(0.037)	(0.065)	(0.053)
Constant	7.558***	7.521***	7.425***	7.546***	7.867***
	(0.081)	(0.203)	(0.087)	(0.154)	(0.129)
Observations	4,071	535	3,500	775	1,315
R-squared	0.114	0.096	0.145	0.111	0.053

Note: Dependent variable is the log hourly wage. Sample includes individuals between ages 18 and 65. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE C.3.

Mincer regression assuming linear returns on education, 2018/19

	(1) TOTAL	(2) PUBLIC	(3) PRIVATE	(4) INDUSTRY	(5) SERVICES
Years of education	0.037***	0.026***	0.049***	0.044***	0.064***
	(0.003)	(0.006)	(0.004)	(0.010)	(0.006)
Male	0.061**	0.025	0.113***	0.162*	0.097**
	(0.025)	(0.026)	(0.037)	(0.088)	(0.044)
Experience	0.029***	0.039***	0.029***	0.031***	0.032***
	(0.005)	(0.006)	(0.007)	(0.010)	(0.009)
Experience squared	−0.000***	−0.001***	−0.000**	−0.001***	−0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
North	0.032	0.009	0.100**	0.205***	0.055
	(0.031)	(0.038)	(0.043)	(0.075)	(0.055)
Central	0.055*	0.065*	0.089*	0.095	0.059
	(0.033)	(0.039)	(0.049)	(0.093)	(0.060)
South	−0.044	0.023	−0.065	0.037	−0.066
	(0.040)	(0.046)	(0.062)	(0.136)	(0.073)
Urban	−0.041	−0.002	−0.050	−0.025	−0.023
	(0.027)	(0.036)	(0.040)	(0.076)	(0.049)
Constant	8.466***	8.423***	8.332***	8.370***	8.073***
	(0.066)	(0.105)	(0.089)	(0.152)	(0.119)
Observations	3,071	1,414	1,655	357	1,156
R-squared	0.087	0.107	0.109	0.126	0.140

Note: Dependent variable is the log hourly wage. Sample includes individuals between ages 18 and 65. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE C.4.

Mincer regression assuming nonlinear returns on education, 2012/13

	(1) TOTAL	(2) PUBLIC	(3) PRIVATE	(4) INDUSTRY	(5) SERVICES
Some primary	0.325***	−0.756***	0.356***	0.405***	0.223
	(0.088)	(0.234)	(0.090)	(0.151)	(0.216)
Completed primary	0.372***	-0.339	0.395***	0.566***	0.121
	(0.079)	(0.213)	(0.080)	(0.133)	(0.188)
Completed lower secondary	0.612***	−0.127	0.662***	0.607***	0.303*
	(0.084)	(0.137)	(0.087)	(0.139)	(0.180)
Completed upper secondary	0.735***	0.029	0.844***	0.963***	0.418**
	(0.084)	(0.121)	(0.087)	(0.143)	(0.174)
Completed vocational training	0.761***	0.115	0.874***	0.805***	0.413**
	(0.086)	(0.115)	(0.088)	(0.161)	(0.173)
University degree	1.010***	0.336***	1.152***	1.255***	0.720***
	(0.087)	(0.103)	(0.093)	(0.237)	(0.178)
Male	0.006	−0.089	0.010	−0.050	0.011
	(0.052)	(0.121)	(0.054)	(0.084)	(0.071)
Experience	0.019***	0.033***	0.022***	0.024***	0.027***
	(0.004)	(0.011)	(0.005)	(0.009)	(0.007)
Experience squared	−0.000***	−0.001*	−0.000***	−0.000	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

	(1) TOTAL	(2) PUBLIC	(3) PRIVATE	(4) INDUSTRY	(5) SERVICES
North	−0.255***	−0.206*	−0.269***	−0.007	0.012
	(0.045)	(0.107)	(0.047)	(0.082)	(0.070)
Central	0.057	−0.112	0.057	0.252***	0.042
	(0.042)	(0.113)	(0.043)	(0.072)	(0.059)
South	0.157***	0.017	0.187***	0.453***	0.094
	(0.052)	(0.120)	(0.057)	(0.127)	(0.067)
Urban	0.220***	−0.094	0.278***	0.274***	−0.032
	(0.034)	(0.072)	(0.037)	(0.066)	(0.054)
Constant	7.488***	8.208***	7.385***	7.333***	7.973***
	(0.100)	(0.177)	(0.106)	(0.181)	(0.199)
Observations	3,973	505	3,434	768	1,269
R-squared	0.116	0.121	0.144	0.124	0.056

Note: Dependent variable is the log hourly wage. Sample includes individuals between ages 18 and 65. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE C.5.

Mincer regression assuming nonlinear returns on education, 2018/19

	(1) TOTAL	(2) PUBLIC	(3) PRIVATE	(4) INDUSTRY	(5) SERVICES
Some primary	0.117	−0.240	0.149	−0.226	0.422**
	(0.125)	(0.399)	(0.128)	(0.148)	(0.213)
Completed primary	0.134	−0.319	0.187**	0.123	0.165
	(0.090)	(0.297)	(0.092)	(0.142)	(0.144)
Completed lower secondary	0.282***	−0.200	0.347***	0.220	0.439***
	(0.087)	(0.294)	(0.090)	(0.153)	(0.138)
Completed upper secondary	0.411***	−0.155	0.550***	0.317*	0.703***
	(0.087)	(0.294)	(0.091)	(0.183)	(0.138)
Completed vocational training	0.256***	−0.268	0.374***	0.219	0.476***
	(0.085)	(0.292)	(0.093)	(0.183)	(0.141)
University degree	0.544***	−0.051	0.763***	0.551***	0.905***
	(0.087)	(0.292)	(0.097)	(0.179)	(0.142)
Male	0.054**	0.020	0.102***	0.173**	0.081*
	(0.025)	(0.026)	(0.037)	(0.088)	(0.043)
Experience	0.032***	0.042***	0.032***	0.029***	0.038***
	(0.005)	(0.006)	(0.007)	(0.010)	(0.009)
Experience squared	−0.000***	−0.001***	−0.000***	−0.001**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
North	0.040	0.012	0.104**	0.193**	0.059
	(0.031)	(0.038)	(0.043)	(0.077)	(0.055)
Central	0.059*	0.059	0.092*	0.083	0.052
	(0.034)	(0.039)	(0.049)	(0.093)	(0.060)
South	−0.027	0.029	−0.046	0.055	−0.050
	(0.040)	(0.047)	(0.063)	(0.142)	(0.074)
Urban	−0.039	−0.004	−0.046	0.008	−0.038
	(0.027)	(0.035)	(0.040)	(0.076)	(0.050)
Constant	8.545***	8.910***	8.432***	8.575***	8.271***
	(0.094)	(0.294)	(0.107)	(0.184)	(0.156)
Observations	3,071	1,414	1,655	357	1,156
R-squared	0.088	0.111	0.114	0.126	0.146

Note: Dependent variable is the log hourly wage. Sample includes individuals between ages 18 and 65. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

TABLE C.6.

Determinants of agricultural land-use patterns

	SHARE OF CULTIVATED LAND ALLOCATED TO						
	RICE	MAIZE	TUBERS	VEGETABLE FRUIT	SPICES HERBS	COFFEE TEA	INDUSTRIALIZED CROPS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Urban	−0.069***	0.002	0.010	0.041***	0.004	−0.006	0.012*
	(0.013)	(0.008)	(0.007)	(0.006)	(0.005)	(0.007)	(0.007)
North	−0.062	0.090***	0.030	−0.120***	0.001	0.015	0.052**
	(0.041)	(0.024)	(0.022)	(0.017)	(0.017)	(0.020)	(0.022)
Central	0.065	0.023	0.053**	−0.119***	−0.045***	0.013	0.018
	(0.041)	(0.024)	(0.022)	(0.017)	(0.017)	(0.020)	(0.022)
South	−0.058	−0.024	0.139***	−0.124***	−0.055***	0.141***	−0.011
	(0.041)	(0.024)	(0.023)	(0.018)	(0.017)	(0.021)	(0.022)
Age	0.001	−0.002	−0.000	0.001	−-0.001	0.001	−0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	0.000	0.000	−0.000	−0.000	0.000	−0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mon-Khmer	−0.029**	0.015**	−0.021***	−0.005	0.036***	0.010*	−0.001
	(0.012)	(0.007)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)
Chine-Tibet	−0.170***	−0.118***	−0.031***	−0.014	0.137***	0.067***	0.136***
	(0.021)	(0.012)	(0.011)	(0.009)	(0.008)	(0.010)	(0.011)
Hmong-Iumien	−0.066***	0.043***	−0.019**	0.002	−0.002	0.013*	0.030***
	(0.016)	(0.009)	(0.008)	(0.007)	(0.006)	(0.008)	(0.008)
Primary education	−0.038***	0.012*	0.003	−0.005	−0.014***	0.013**	0.028***
	(0.011)	(0.006)	(0.006)	(0.005)	(0.004)	(0.006)	(0.006)
Upper secondary	−0.039*	−0.013	0.027**	0.013	−0.025***	0.006	0.035***
	(0.021)	(0.012)	(0.012)	(0.009)	(0.009)	(0.011)	(0.011)
Tertiary education	−0.036	0.006	−0.036**	−0.001	−0.012	0.031*	0.029*
	(0.032)	(0.018)	(0.017)	(0.013)	(0.013)	(0.016)	(0.017)
Female	0.005	−0.005	−0.005	−0.001	−0.001	0.011	−0.002
	(0.019)	(0.011)	(0.010)	(0.008)	(0.008)	(0.009)	(0.010)
Land ownership	−0.085***	0.004	0.009	0.004	0.029***	0.008	0.028***
	(0.017)	(0.010)	(0.010)	(0.007)	(0.007)	(0.009)	(0.009)
Land size 1-5 Ha	−0.216***	0.076***	0.049***	0.005	0.017***	0.021***	0.043***
	(0.010)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Land size >5 Ha	−0.420***	0.167***	0.055***	0.018*	0.003	0.033***	0.140***
	(0.023)	(0.013)	(0.013)	(0.010)	(0.009)	(0.012)	(0.012)
Access to market	−0.126***	0.028***	0.037***	0.004	0.037***	0.044***	−0.024***
	(0.013)	(0.007)	(0.007)	(0.005)	(0.005)	(0.006)	(0.007)
Lack access to finance	0.029***	0.005	−0.007	0.001	0.009**	−0.030***	-0.009*
	(0.010)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)
Highland	−0.009	0.025***	0.007	−0.001	−0.026***	−0.024***	0.027***
	(0.012)	(0.007)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)
Constant	1.040***	−0.015	−0.049	0.125***	0.021	−0.080**	−0.039
	(0.067)	(0.039)	(0.037)	(0.028)	(0.027)	(0.034)	(0.036)
Observations	4,716	4,716	4,716	4,716	4,716	4,716	4,716
R-squared	0.214	0.129	0.086	0.029	0.154	0.122	0.127

Note: Seemingly unrelated regression to estimate a system of land use equations. Dependent variable is the share of land allocated for growing a specified crop type. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Ha = hectare.

TABLE C.7.

Determinants of farm productivit

	(1) LOG PRODUCTIVITY	(2) LOG PRODUCTIVITY
Urban	0.343***	0.264***
	(0.066)	(0.066)
North	0.119	0.502*
	(0.275)	(0.274)
Central	0.222	0.601**
	(0.272)	(0.270)
South	−0.458	−0.030
	(0.297)	(0.295)
Age	0.003	0.002
	(0.013)	(0.012)
Age squared	−0.000	−0.000
	(0.000)	(0.000)
Mon-Khmer	0.137*	0.151**
	(0.074)	(0.074)
Chine-Tibet	0.518***	0.595***
	(0.119)	(0.121)
Hmong-Iumien	0.361***	0.442***
	(0.088)	(0.094)
Completed primary	0.378***	0.351***
	(0.073)	(0.071)
Completed upper secondary	0.544***	0.472***
	(0.117)	(0.115)
Completed vocational training/university	0.593***	0.610***
	(0.142)	(0.140)
Female	−0.046	−0.099
	(0.145)	(0.140)
Irrigation		0.185**
		(0.094)
Log Insecticide spending per Ha		0.021***
		(0.006)
Log fertilizer spending per Ha		0.009*
		(0.005)
Commercial agriculture		-0.051
		(0.169)
Land size 1–5 Ha		−0.584***
		(0.090)
Land size >5 Ha		−1.593***
		(0.265)
Commercial agriculture x Land size 1–5 Ha		0.417***
		(0.149)
Commercial agriculture x Land size >5 Ha		0.739**
		(0.317)
Access to market		0.266***
		(0.095)
Lack access to finance		−0.328***
		(0.123)
Constant		15.013***
		(0.431)
Observations	3,901	3,901
R-squared	0.103	0.143
Crop dummy	Yes	Yes

Note: Ordinary Least Squares (OLS) regression. Farm productivity is estimated using output per harvested land and the median farm-gate price by province. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Ha = hectare.

TABLE C.8.

Correlates of migration and remittances

	Correlates of the probability for a household to send a migrant		Correlates of the probability to receive remittances		Correlates of remittances received (Heckman)	
					Model	Selection equation
	DF/DX	DF/DX	DF/DX	DF/DX	COEF.	COEF.
Residence rea						
Urban	ref.	ref.	ref.	ref.	ref.	ref.
Rural	−0.016**	0.016***	0.004	0.016***	−0.428***	0.183***
Region						
Vientiane	ref.	ref.	ref.	ref.	ref.	ref.
North	0.013	0.001	0.020	−0.047***	−0.334	−0.541***
Central	0.004	0.019*	0.021	−0.013	0.349	−0.136
South	−0.029**	0.061***	0.041**	−0.004	−0.580**	−0.022
Household size	−0.035***	−0.011***	−0.044***	−0.002	0.504***	−0.019
Household size sq.	0.002***	0.000**	0.002***	0.000	−0.019**	−0.001
Head age	0.013***	0.007***	0.020***	0.001	−0.001	0.014
Head age sq.	−0.000***	−0.000***	−0.000***	0.000	0.000	0.000
Female head	0.039***	0.017*	0.058***	0.027**	−0.395*	0.244**
Head ethnicity						
Lao-Tai	ref.	ref.	ref.	ref.	ref.	ref.
Mon-Khmer	−0.007	−0.041***	−0.063***	−0.023***	0.072	−0.273***
Chine-Tibet	−0.023*	−0.028***	−0.058***	−0.009	0.387	−0.098
Hmong-Iumien	−0.037***	−0.030***	−0.073***	0.006	−0.371	0.065
Other	−0.005		−0.064*	−0.004	0.475	−0.034
Head education						
No formal education	ref.	ref.	ref.	ref.	ref.	ref.
Some primary	0.015	0.003	0.015	0.009	0.153	0.091
Completed primary	0.022**	0.004	0.024**	0.021***	−0.271	0.219***
Completed lower secondary	0.008	-0.014*	−0.014	0.018	−0.122	0.170
Completed upper secondary	−0.016	−0.014	−0.037*	0.008	0.193	0.080
Completed vocational training	0.004	−0.003	−0.008	0.009	−0.565*	0.091
University degree	−0.010	−0.013	−0.025	0.029	−0.002	0.260
Head marital status						
Never married	ref.	ref.	ref.	ref.	ref.	ref.
Married	−0.067**	−0.070***	−0.141***	−0.038*	−0.531	−0.327*
Divorced	−0.057***	−0.032***	−0.095***	−0.027*	−0.810*	−0.400*
Separated	−0.041	−0.023	−0.071	0.024	−0.245	0.210
Widowed	−0.063***	−0.031**	−0.105***	−0.027**	−0.557	−0.389**
Household own farmland	0.041***	0.027***	0.070***	0.005	−0.020	0.051
Head sector of occupation						
Agriculture	ref.	ref.	ref.	ref.	ref.	ref.
Industry	0.031**	0.024**	0.061***	0.011	0.487**	0.099
Service	0.020*	0.009	0.031**	−0.006	0.205	−0.073
Unemployed/Inactive	−0.005	0.005	0.008	0.008	0.053	0.084
Violence in household is a major problem in the village	0.007**	0.004*	0.013***	0.001		0.008
The province lost jobs between 2013 and 2018	0.046***	0.027***	0.065***	−0.012**		−0.154***
The household has a migrant				0.514***		2.108***
Constant					14.063***	−2.191***
athrho						−0.339***
lnsigma						0.622***
Observations	8457	8395	8457	8457	8457	8457

Note: *** p<0.01, ** p<0.05, * p<0.1.

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